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Grape Grafting

Some Practical Instructions in the Art

By L. H. Bailey, in Bulletin Cornell University.

STRUCTURE OF THE STEM.

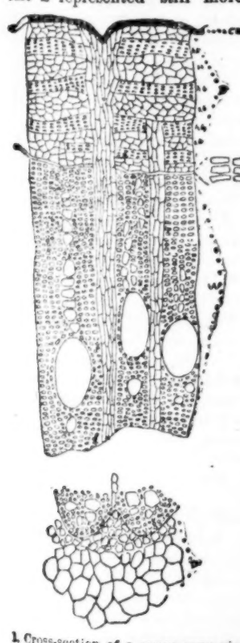
Hard wood grafting is not a difficult operation when a few essential points are observed. From 95 to 100 per cent. of the grafts should grow when the work is carefully done, and skill in performing the operations is soon acquired.

Figure 1 represents a cross-section of the stem of a grape, and an understanding of the general character of the different parts will assist in explaining the reason of the successes as well as of the failures which will occur with all operators.

The corky external layer (c k) as well as the bark (B) immediately underneath it are composed of cells which have ceased to grow. The same may also be said of the cells of the wood (W), of the medullary rays (M), and of the pith (P). Those forming the pith are perfectly inactive and have no practical value in the economy of the plant. The wood of the grape serves as a medium for the passage of large quantities of water or crude sap. In these cells the general tendency of the movement is upward.

The office of the bark and of the corky layer is probably mainly one of protection to the more delicate parts beneath. The cells composing them, excepting the soft bast cells (s b), are also inactive, and possess apparently no life. The flow of liquid, if it ever takes place in them, is very limited. The same may also be said of the medullary rays. The use of these woody cells, extending from the pith to the outer bark, seems to be largely mechanical, for they serve as a framework which is designed to give solidity to the stem, and also as a medium of connection between the inner and outer parts of the stem.

One part of the diagram, that marked (C), still remains to be discussed, and it is this portion which is of the greatest interest to those who graft plants. This layer of cells or cambium, as it is called, is that part of the stem which contains the living or growing cells. In the main part of the drawing it is represented simply by two parallel lines. But at the end of these lines to the right the structure is represented still more highly



1. Cross-section of a grape cane, much magnified, to show the structure. c k, cork. s b, soft bast. h b, hard bast. B, bark. C, cambium. W, wood. P, pith. M, medullary ray.

magnified. It is here seen to be composed of three rows of cells running in a direction parallel to that of the bark. The number of these rows varies at different times of the year, there being many more during the period of active growth.

OFFICE OF THE CAMBIUM.

It will be noticed that the cambium layer separates the wood from the bark. An interesting feature of this layer is that after division the cells next the bark go to the formation of bark, while those nearest the wood form woody fiber, yet the origin of the two is the same. We may suppose the cells of the central row to be divided into halves by a vertical wall. One-half will then go to the formation of either wood or of bark, as the case may be, while the other half remains to increase in size and to divide as before. Thus the origin of both the young bark and of the young wood is probably in a single row of cells situated between these two parts of the stem, and it is largely in this layer that active growth in our common woody plants takes place.

From the above it will at once appear that no union will take place between stock and cion unless the living cells or the cambium layers of the two are placed in close contact, and no grafting can be successful where these conditions are not complied with. Some plants appear to be more exacting in this respect than others, and the grape, fortunately for the careless vineyardist, is not so particular as are many of our cultivated trees and shrubs. It will endure a certain amount of careless work and still effect a union.

2. Cleft grafting.

This fact should not encourage poor or hasty workmanship. All tendencies which lessen the chances of success deserve to be studied so that they may be avoided. No sand or dirt should be allowed to rest upon cut surfaces, if it can be helped, until after the parts are placed in position. Such particles would prevent to a greater or less degree the intimate contact of the two surfaces. All cuts should be made as smooth and as straight as possible, so that no projection of wood will prevent the two layers from pressing against each other.

It is not essential to success that the cambium layer of the two parts be in contact at every point. Such a result is almost impossible in practical work, and it is especially so in grapes where large stocks are being worked, for in them the grain is generally considerably twisted. But in order to insure success the layers should come together in at least one point. This will be enough to insure the "taking" of the graft, but the growth may not be very strong and the union will naturally be rather weak for the first year or two. If the cambium layers are in proper condition and in close contact for a considerable distance, a strong union and a vigorous growth will result.

CONDITION OF CION AND STOCK.

The condition of the cion and of the stock must also be considered, for it is of the greater importance that these should be in a proper state as regards the comparative activity of the cambium layers. The cion should in all cases be dormant or practically so. If it is not dormant the cambium cells will have become accustomed to a certain supply of sap, and any serious reduction in this supply will be followed by a check which may be fatal. Such a check would take place if an active stem be cut and inserted upon a stock that is unable to supply the accustomed amount of nourishment; or even if the sap of the stock is in active flow the comparatively slight transfer of material which could be made immediately after an operation would be insufficient to supply the demands of the cion.

The stock may be more or less active, however, at the time of the grafting, provided the cion be inactive. A dormant cion requires but little nourishment, and if the stock satisfies these needs that is all that is required. The

3. Grafting knife for splitting stubs.

operations should be successful provided the flow from the stock is not so heavy that the cion will be "drowned out." Such a flow occurs while the first growth in Spring is taking place, and cions should be inserted either before it begins or immediately after the most energetic action has ceased.

SEASONS FOR GRAFTING.

Grape grafting may be performed in the Fall, early in the Spring before the heavy flow of sap begins, or during late Spring, when the sap is no longer so active; opinions are divided as to which is the best season of the year. If the work is done in the Fall, the time for the uniting of the two portions before active growth begins is very long, and on this account the chances of success are better. But the danger of accident during the Winter must be taken into account to offset this advantage. When the grafts are made below ground, as is commonly done, there is danger of the cion being heaved out by the frost, or at least of being misplaced to such an extent that no union will take place. Soils which heave the most will be apt to do the most damage. Winter protection is essential to success, and where it is given, good results should follow. The protection may consist of burying the cion completely after the graft has been made, or a heavy mulch of some material, as straw, leaves, etc., will answer. Such a covering will prevent the alternate thawing and freezing of the soil, which is sure to result in more or less injury to the graft. * * *

The majority of those who have had practical experience in the grafting of grapes seem to agree in saying that early Spring is the most suitable time for performing the operation, all things considered. The graft should be inserted before the flow of sap has begun, and the first warm days in March are the ones which are well suited to the work in a great many seasons. On the whole, the earlier in Spring that the grafts are inserted the better are the chances of success, as more time is allowed for union to take place. Much depends upon the season, but generally March will offer some periods in which the vines can be worked. It is but a short time after the frost is out of the ground before the vines will bleed considerably when cut, so the work must be done before the season becomes far advanced.

The third period in which grapes may be successfully grafted is late in Spring, or as soon as the vines have made a growth of eight or 10 inches and the first heavy flow of sap has ceased. The principal objection to this season is the difficulty of obtaining suitable cions. These should be cut while perfectly dormant; they should then be packed in some damp material, as sand, sawdust, moss, etc., and placed in as cool a position as can be found. This is done to retard all growth until the cions are inserted. When the grafting is done in the Fall or early Spring the wood is in suitable condition for use, and it may be cut as wanted. But for late Spring grafting the wood must be cut and stored in an ice-house if possible, although

5. Crown grafting by inlaying.

open ground in some well shaded spot will also answer fairly well.

It will be noticed that in the methods of grafting described in the following pages only those are mentioned in which the cut surfaces of the stock are all below the level of the ground. My experience with grafting grapes above ground has been such that I cannot recommend it, except for particular purposes. Much better results are obtained when the cions are inserted low enough so that they may be partially or wholly covered by moist earth. The work is then done under certain disadvantages, but the successes are so much greater that they more than make up for the extra trouble.

CLEFT GRAFT.

This form of graft is generally made by sawing off the vine from three to six inches below the surface of the soil, leaving a stub into which one or two cions may be inserted, as shown in Fig. 2. The saw used should be sharp, so that it will work easily and not lacerate the edges of the stub. When much grafting is to be done it might be a matter of economy to have a saw made especially adapted to the purpose. The handle should be on a higher plane than the blade; this allows the free use of the hands above the ground while the blade is below, near the bottom of the excavation made about the stem of the vine. If a common straight saw is used, the stock must be cut off at an angle or the hole must be made larger, neither result being exactly what is desired. The blade need not be more than six or eight inches long, and only wide enough to give it firmness. The handle, which can be of any convenient pattern, but large enough to be grasped by both hands, should be attached to a solid bent shank having the part which lowers the block into the excavation from three to four inches in length.

When the stock has been sawed, it is a good plan to smooth the top of the stub, at the places in which the cions are to stand, with a sharp knife in order to dress those portions of the sawed surface and to show more distinctly the line dividing the bark from the wood.

The next step is to split the stub, leaving the smoothed parts above mentioned at the top of the cleft. This splitting of the stub is not such an easy matter as at first appears. A tool commonly used for this purpose is shown in Fig. 3. It is made very strong, so that there will be no danger of its breaking when driven into the stub. A large chisel might answer the same purpose. The cutting edges should be sharp, to prevent unnecessary tearing of the cells. The grain of grape wood is by no means very straight, and some varieties seem to have a peculiarly twisted wood. In such cases a keen edge upon the tool is of great value. It has been recommended to use a fine saw for making a cleft to receive the cions; in many cases this advice is well worth following, for it is practically impossible in some instances to split a stub in such a manner that a cion will have much chance of growing.

When the stub has been split or sawed to a depth of about two inches it is then ready to receive the cions. These should be prepared as shown in Fig. 4. They should carry at least two buds, and short-jointed wood may carry three. The cuts which form the lower end of the cion into a wedge should begin a little below and on each side of the lower bud. The wood should be cut so that the edge opposite the bud shall be thinner than the part under it, as is shown in the illustration. These cions may be prepared in this manner before taking them to the field, but care must be taken that the cut surfaces do not become dry. This may be prevented by packing them in some clean material as moss or moistened cloth. When all is ready for the insertion, the wedge which projects at the end of the grafting knife, Fig. 3, is driven into the central portion of the cleft until the space is large enough to receive the cions. These are then carefully inserted, not in a direction parallel to the central axis of the stub, but at a slight angle with it, allowing the tops of the cions to lean a trifle away from the stub and from each other. The reason for this inclination is to make sure that the cambium layers of cion and stock cross at one point at least. The greater the angle of the cion the shorter will be this place of contact; therefore, care must be taken that the cions diverge but slightly. When both cions are in position, the lower bud, having been placed on the outside, the wedge is carefully withdrawn. As the cleft in the stub closes, pressure is brought to bear upon the grafts; but since these were cut so that the portion under the lower bud is thicker than the part opposite to it, the pressure is greater at the outer side of the cion. This is where it is wanted, for the cambium layers are brought into very close contact and if the work has been well done success is practically assured. In case of large stubs, the pressure in the cleft may be severe enough to injure the graft. When the cion is being squeezed so that its form is altered it is well to insert a wooden wedge in the cleft to relieve this excessive pressure.

4. Cion.

All that now remains to be done is to fill the cavity about the stub with earth, and the cion should also be buried so that only about an inch, or the part above the upper bud, remains uncovered. The soil should be firmed slightly to prevent it from drying out, and the

6. Grafting knife for inlaying.

operation is finished. Wax is sometimes used to cover the cut surfaces of both cion and stock, but I have never been able to see that any advantage was obtained from its use that the earth did not grant equally well. Some have gone so far as to say that its use is positively injurious, so when the grafts are placed below the surface of the soil the use of wax is not recommended.

The growth made the first season by such grafts is frequently very large, and enough wood is formed and a sufficiently strong union made to support nearly a

7. Modified tongue graft.

full crop of grapes the next year. If the operation is well done, therefore, only one season is entirely lost and but a small part of the crop of the second.

CLEFT GRAFT ON A PARTIALLY SEVERED VINE.

This form of graft differs from the preceding by not having the vine completely cut off. A horizontal cut is made only about half way through the stock, and then another cut is made, beginning from one to three inches above the horizontal cut, and sawing inwards and downwards so that a wedge-shaped piece is removed from one side of the stem. The length of the downward cut should be about one and a half times as long as the horizontal cut, in order to allow the cleft to be made more easily. The manner of inserting the cions is identical with that already described.

The advantage of this form of graft is that if the cions die the original vine is not lost, but will continue to bear. The yield may be smaller, yet some crop is harvested whether the cions die or live. In the latter case the old vine is pinched backed so as to throw more sap into the graft. The second year the old vine is reduced still more and at the end of the year may be cut away entirely, thus allowing the cions to take its place. in this manner but a comparatively small loss in yield is sustained.

CROWN GRAFT BY INLAYING.

Figure 5 represents the stock prepared for this form of graft. The stock is cut as for cleft grafting. In place of splitting the stub, two V-shaped grooves are made on opposite sides of it. These grooves are made by means of an instrument especially designed for the purpose. It is shown in Fig. 6. The tip cuts out the triangular part, as shown in the illustration. In the blade itself is a part which is bent at the same angles as the parts forming the tip. This indented portion of the blade is used for cutting away the end of the cion, and with very little practice an almost perfect fit of the two parts can be made. The two cions are then placed upon the stock and are firmly tied there. The tying material should be of such a nature that it will decay before there is any danger of strangling the cions. Raphia does very well, as does also bast. I have also used No. 18 knitting cotton, soaked in boiling grafting wax, with entire satisfaction. The ligatures should be made as tight as possible.

Although this method of grafting is not so commonly used as others, it still possesses some decided advantages. It is a much simpler and more satisfactory method than cleft grafting in very curly wood. The tying is a slow process, and for straight-grained wood the cleft graft is to be preferred. It is also open to the objection of requiring the shoots to be staked or tied to some support, for the wind is apt to break the point of union more easily than with other methods. A good union admits of a very strong growth, and if the above precautions are kept in mind the vines will equal those produced by either of the preceding methods.

CUTTING GRAFT.

Figure 5 also shows a cion prepared for another graft. The only difference between this and the preceding is that the cion is made very long. One side near the top is cut in the form of a wedge which fits snugly into the V-shaped cut in the side of the stock. The lower part of the cion projects downward and outward for 10 or 15 inches. This lower portion also takes root and under favorable circumstances an enormous growth can be made the first year. The sprouts which have started from the stub should be kept down in this as well as in other forms of grafting, but they appear to be particularly abundant when this method is followed.

MODIFIED TONGUE GRAFT.

Figure 7 represents a form of grafting which is quite common in Italy. The stock is cut off at an angle an inch or two below the surface of the soil and is then split downward, beginning a little above the center of the cut surface, Fig. 8. This downward cut is made at a slight angle to the grain in order to prevent splitting. In true tongue or whip grafting the cion is prepared in the same manner as the stock; but in the graft shown in the figure a portion of the bark is first removed, and from the lower end of this cut another is made inward and upward in order to form the tongue, Fig. 9. The cion is not cut in two when the tongue is made, as is the stock, but it extends below and also takes root. Cion and stock are then united as shown in Fig. 7, care being taken to have the cambium layers in contact on one side. When cuttings or parts of equal diameters are grafted by the tongue graft, the layers on both sides may be placed together. The tying of grafts is advisable when small wood is used, but large stocks, when cut below the ground, scarcely require this precaution. When the operation is finished, the soil is heaped up as in cleft grafting.

In California the tongue graft has gained considerable favor for large as well as for small stocks. In case the stocks are large, they are pared down so that the part upon which the cion is inserted is not much wider than the cion itself. When the two parts are in position, the graft is firmly tied with strips of common calico about an inch wide and 10 inches long. The estimate cost of the operation is given at three cents per vine, this including the second grafting of those which failed to grow the first time.

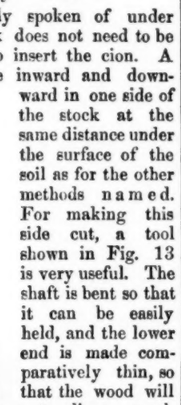
8. Modified tongue graft, prepared stock.

SIDE GRAFT.

This method possesses an important advantage, already spoken of under No. 2. The stock does not need to be cut off in order to insert the cion. A cut is first made inward and downward in one side of the stock at the same distance under the surface of the soil as for the other methods named. For making this side cut, a tool shown in Fig. 13 is very useful. The shaft is bent so that it can be easily held, and the lower end is made comparatively thin, so that the wood will not sliver much when the cutting edge is driven in. An ordinary chisel, if well sharpened, may answer the same purpose, but not so well. The tool should be driven in from one to one and a half inches.

9. Modified tongue graft, prepared cion.

The cion for this graft is easily made. The lower end is cut in the form of a simple wedge, and it is then pushed into the cut in the side of the stock until all the cut surfaces of the cion are covered by the lip of wood on the stock. Figure 12 shows the manner of insertion; it represents the upper end of the lip as being removed, but this is not necessary. After the cion is inserted, taking care to have the cambium layers as nearly in contact as possible, the stock is firmly bound. The cavity is then filled with earth and the operation is finished. As the cion grows, the old vine should be pinched back so that the nourishment may go to the formation of the desired top.



10. Side graft.

ON CUTTINGS.

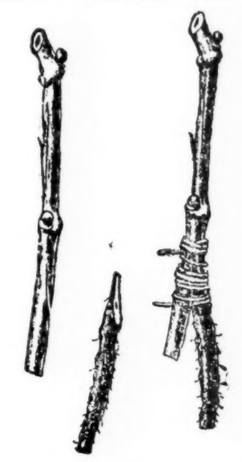
Figure 14 shows a rooted cutting on which has been grafted a cion by means of the cleft graft. It represents a class of graft which, though as yet of little practical importance in this country, is in Europe a very important branch of grape propagation. The stock commonly used there is the strong growing *Vitis riparia*, and the operation is performed in order to grow the European varieties upon roots which will resist the action of the root louse, or phylloxera. Rooted cuttings are perhaps not so commonly used for stocks as freshly-cut wood. The grafting is done in the Winter, and the methods followed are very similar to those in common use here for the root grafting of apples, etc. The splice graft is often used, as well well as the whip or tongue graft. Machines have been made in France which sort the cions and the stocks so that only those having equal diameter are united. This increases the chances for a successful union.

11. Tool for making incision for side graft.

After the two parts are placed in position, they are firmly tied with waxed twine and packed in damp material until Spring. They are then set out in nursery rows and allowed to grow one season. The following year they are set in vineyards, although in some cases this is done directly, instead of putting them first in the nursery. The grafts are planted so that the point of union between cion and stock shall be on a level with or a trifle below the surface of the soil. The earth is then heaped around the cion, leaving only the upper bud exposed.

12. Rooted cutting cleft grafted.

This method of grafting may become of value in this country for the purpose of having weak-growing varieties upon vigorous roots. The field is so new that



13. Inverted side graft for cuttings.

one can scarcely predict what will be the results which may follow from grafting one variety of grape upon another.

Vermont World's Fair Merinos Sold.

It will be remembered by all merino breeders who were exhibitors at the Columbian that Mr. E. Stickney, of Vermont, returned to his home, after winning his share of premiums, and died shortly afterwards.

His choice flock of merinos, one of the best and oldest in the United States, were sold at auction recently to settle up the estate. The miserably low prices realized is a matter of astonishment; nor, dare we surmise the cause—not even free trade—unless the Vermont breeders forgot themselves, or had departed from that old time chivalry that made merino breeders stand by each other and the merino sheep industry. We very much regret to quote these prices, but such as they are we find reported to the *American Sheep Breeder:*

"Young ewes sold in lots as followers: Five two and three years old, $4. each; five two and three years old, $2.60 each; five at $2 each; six at $10 each; 18 ewe lambs, $5.25 each.

"Rams were sold as follows: Two stock rams, $10 and $11 each; two World's Fair rams, $4 and $5 each; two at $3 each; one at $3.50; one at $7; one at $2.75; one at $1.50; one at $11; one at $1.35; one at $5.25; 19 ram lambs at $3.25. Did not stay to see the old breeders sold. They were sold very low, say $1.50 to $2.50 each."

Seeds of all evergreen trees, except the magnolias, should be sown in the Spring. Box, evergreen thorn, holly, juniper, and prinos do not sprout until the second Summer.

Yard Echoes.

Like corn, wheat is better for slow, hard work, than for speed. Oats and hay are best for fast-goers.

Grain alone is too highly concentrated food for horses. They must have some "roughness" with it, such as hay, straw or fodder.

Wheat is more a growth than a fat producer, is good for young animals, but should be coarsely ground before feeding.

The Massachusetts Cattle Commissioners think that fully 11 per cent. of the cattle in the State are afflicted with tuberculosis.

Trotting stock, except for extreme speed, is suffering from over-production, but there is and probably always will be a profitable market for handsome, useful, half-bred hackneys.

Two parts each of bran and ground wheat and one of chopped oats make the best ration for brood mares. They should be given about three pounds of it, three times a day, with hay or straw.

Never believe the man who says he can remove a spavin or ring-bone and leave no blemish. Even if he calls himself a professor, do not question his title—that is what he is and all he is.—EDW. MOORE, V. S., in *Country Gentleman*.

Whole wheat should not be fed to horses; they swallow it withoute hewing, and it ferments in their stomachs, producing indigestion and colic, or passes through unchanged. It should be either soaked, to burst the grains, or coarsely ground, for the same purpose.

Mares are never ridden or driven in Argentine. They are kept till they are 15, when they are killed, their hides are sent to Europe, and their bones and flesh used for fertilizer. The poorest man in the country would feel disgraced at riding a mare.

Central Illinois farmers think that alsike clover makes the best feed and pastures for their stock. They think it superior to red clover, because it has a smooth stalk, where that of red clover is fuzzy, and this fuz makes animals cough. They sow it in March with timothy or blue grass. It is good for wet lands, and does not kill out like red clover.

Cheap Horses.

Good horses are cheaper in some parts of the West now than dogs in the East, for there are few dogs not owned by some one, while the horses cannot be given away. All over the West horses have been astoundingly cheap for some time, and two or three dollars has been a good price for a good animal. A hundred head of ranch horses, sturdy, unbroken bronchos from Wyoming, were sold in Denver for $90 and the freight recently. It is reported that a big stock firm in Idaho has turned more than 250 ponies adrift to shift for themselves during the Winter, as it was cheaper to do this than to provide food for them. The firm could not get even a dollar apiece for them.

Pen Notes.

It is claimed that the hog's natural remedy for mange is a plaster of mud. Kerosene is also a good remedy.

A Kansas farmer says that cracked wheat soaked with a quart of flaxseed to a bushel of thick slop, is the best hog feed in the world.

Some Sheep Items from Britain.

Cooper's Sheep Dip Co., in "A Souvenir of the World's Fair," Chicago, 1893, says: "There was no real data as to the number of sheep in Great Britain until the year 1867. In that year the numbers were for Great Britain, 28,919,000, and in the following year they reached 30,711,000. These numbers dropped in 1882 to 24,320,000, but since then there has been a gradual recovery until in 1892 there were 28,785,000. The average number of sheep kept on every 1,000 acres of land under cultivation is now 872, being greater than any year since 1879. There is good reason to hope that with effective protection against the ravages of foot and mouth and other diseases the number of sheep will go on steadily increasing. It is presumed that two-fifths of the whole number of sheep are annually slaughtered and that the average weight per sheep is 70 pounds. On this reckoning the total home production of mutton was in 1891 359,000 tons."

The Enterprise of Canadians.

The annual reports of the swine breeders' and sheep breeders' associations show the most shrewd and systematic plans for furthering those valuable industries that must always lie at the bottom of their agricultural interests. Canada is an agricultural country and must ever remain so while bearing allegiance to the mother country. Manufacturing enterprises are not encouraged with that zeal and expenditure of money as is seen in furtherance of agricultural developments. England can't raise the food, but with cheap food she can clothe the people. This is the policy of the Home Government towards her colonies. Right well does Canada do her part in adopting systems and methods that command the respect and admiration of everybody.

THE HORSE.

The Best Way of Treating Wounds.

The intelligent veterinarian of to-day entirely rejects the old and barbarous superstitions about treating wounds upon horses with hot irons, acids, tobacco juice, caustic washes, etc.

The modern surgeon knows, however, that the healing of wounds, whether accidental or produced by his knife, depends upon the normal physiological action of the tissues. The injury inflicted is repaired not from without, but from within. With these natural reparative processes he interferes as little as possible. Acting on the valuable teaching of Sir Joseph Lister, he carefully guards against those conditions which prevent healing. He removes those grosser dirt particles which may have entered a wound, say, a horse's broken knee, which may cause mechanical irritation, lower the vitality of the textures, and retard healing. But further realising the ubiquity and wonderful powers of multiplication of these micro-organisms which invade wounds, which develop wasteful suppuration, lead to septic fevers, and which although only microscopic constitute the chief danger of wounds, he adopts the approved methods of destroying these invading foes, and preventing their access to the injured surfaces. All wounds which have been exposed to the attacks of these organisms are accordingly washed with solutions of such antiseptics as carbolic acid or corrosive sublimate.

Other injuries, as well as wounds, their actural nature having likewise been investigated, are now also more rationally and successfully treated. The fast and severe work to which horses are so commonly subjected causes sprains of muscles, tendons, ligaments, and joints, frequently leading to permanent enlargement and impairment of usefulness. In these accidents a few fibers of tendon or ligament are usually torn, serous fluid is outpoured from adjacent injured vessels, interfering with repair, and liable gradually to become solidified, causing inconvenient, unsightly thickening. Similar enlargements also result from bruises produced by over-reaches and other causes; while joints and burse of tendons, mainly from concussion, exhibit wingalls.

The usual treatment in such cases has been to foment diligently with hot water, which notably checks bleeding and extravasation of fluid, or to irrigate continuously for a number of hours with cold water. Capt. Hayes, F. R. C. V. S., Melton-Moubray, has recently, however, adopted with success dry bandaging and massage. In an address given lately to the Lincolnshire Veterinary Medical Society, and reported in the *Veterinary Record*, he stated that in the several sprains which occur below the horse's knee and hock, he wound carefully round the limb two to four yards of unbleached cotton wadding cut into suitable widths, and kept it firmly and equably in place with an ordinary cotton bandage six yards long and three inches wide. Over this is advantageously placed a flannel bandage, which prevents the animal biting and tearing the dressing. The uniform pressure thus produced in recent cases prevents injurious outpouring of serum, and, where this has already occurred, will hasten its absorption. The pressure at first is recommended to be maintained for 24 hours, but subsequently the bandage should be taken off and replaced night and morning.

In serious and old-standing cases, the second portion of Capt. Hayes's treatment is as important as the first, and consists in massage continued from five to 15 minutes, either daily, or twice daily, when the bandages are removed. The firm pressure with thumbs and fingers removes all recent swellings, and greatly diminishes even those that have existed for some weeks, and have appeared to be partially solidified. From personal unpleasant experience, and from observation *both* on horses and dogs, I am well aware that this massage, vigorously performed by a competent operator, is a painful process, and hence a tender limb must not at first be thumbed too severely, nor for too long at a time. The skin will not suffer from the pressure if, during the process, it is moistened with some oily lubricant. Two other important details are insisted on by Capt. Hayes: 1. The parts subjected to massage should be in a relaxed position; the fore limbs, for example, should be flexed. 2. The friction should be applied in the course of the lymphatics and veins, and not against it, as is usually done. In bad sprains of the flexors of the limbs, in order to reduce strain, a shoe with high heels is generally tacked on; and although trotting or even walking exercise is injurious, the passive flexion and extension of the injured limb is enjoined. In India, Capt. Hayes mentions that horses with sprained limbs are sometimes prescribed such desirable exercise, without injurious strain on the damaged member, by being made to swim.

With well-filled granaries and root-houses, immense ricks of hay and abundant good pastures, and their stock in fine flesh, Montana farmers go into the Winter smilingly, says the *Rocky Mountain Husbandman*.

SHEEP AND WOOL.

Shearings.

The Australians have increased their wool clip 100,000,000 pounds in the last year. A similar increase has been made in South America and the Cape of Good Hope.

During the month of October, just closed, there were 372,363 sheep sold, against 326,136 during the same month one year ago. It is wonderful with such tremendous receipts the market did not go to pieces—all were sold.

"Never before was such universal and overwhelming rebuke administered to a party's leaders, and never before were so many names, made memorable by long political service, written on the sepulchers which will never open for their resurrection."—A. W. TOURGEE.

The sheep is an animal to man most invaluable, its utility the most immediate and extensive; it alone satisfies wants of the greatest necessity, it furnishes both food and apparel, besides the advantages arising from the skin, suet, milk, entrails, bones and dung of this creature, to which nature seems to have given nothing as its property; all is to be delivered up to man.—BUFFON.

It is possible, now, for the farmer to have some cash returns from the flock every month during the year, the same as with hogs and cattle. A few fat mutton sheep or lambs is a mighty nice source of income; a nicely-dressed carcass of mutton is always a cash article at the store or for retail to neighbors.

There is significance in the fact that the breeders of British mutton sheep in this country have had fairly good sales as well as the English farmers. Those who have attended the fairs this Fall have noticed the high excellence of the show sheep, not of one breed, but of all. Only the best have been wanted, and they have to be vouched for by the several register associations.

The frozen meat trade is being closely studied by Australians and her rivals; rivals not in value of exports, perhaps, but in shrewdness and intelligent systems by which they may control the trade in Europe. Every nook and corner of the earth are being interviewed for a market, and no stone is left unturned to secure an entering wedge that promises a profitable future.

The French Huguenots introduced sheep into Florida in 1564. This was one year earlier than the Spanish, under Menendez, introduced sheep with the founding of St. Augustine. The French sheep, with the women and children, are mentioned as being among the spoils that fell into the hands of the Spaniards at the massacre at Fort Caroline Sept. 19, 1565.

The 6th of November, 1894, will always be a reminder to tariff reformers that the American people don't intend to have free foreign wool in their markets, but there is no use in laying back and trying to believe that the success of the potection party can bring better prices for domestic clips in a short time. There will be a monstrous pile of foreign wool dumped onto the markets before the thing can be stopped that will take years to work off. Wool flocks will have a long, hard pull; it will take lots of faith and patience to get through. In the meantime financial relief from the low prices of wool must come from the meat product of flocks. It is expected that a tremendous effort will be made to break down the sheep husbandry of this country. The work is well begun, and though the people have declared for protection the wool market will be crowded with supplies before the domestic clips can control the markets, and as a finishing blow the foreigners, as now seems possible, will unload frozen meat upon our markets until the sheep raisers are entirely snowed under. It is only in this way that the sheep industry of the United States can be utterly destroyed. It is not worth while to expect mercy or a mistake at the hands of foreign sheep raisers. They are going to make the most of their opportunities to capture our markets to their advantage and secure them by driving our flocks out of existence by wholly discouraging flock owners and the investment of capital in sheep. The only thing that can prevent such a catastrophe will be the discretion and fidelity of our farmers in staying by the industry until the effects of Democratic legislation are passed away.

The people of Elm Creek region, Neb., south of the river are going to irrigate next year. They will build a ditch eight miles long, taking their water from Nelson's Creek.

Horned Dorsets at the Columbian.

A complete history of the sheep show at the World's Columbian Exposition will place the Dorset Horn exhibit as the most unique and complete. They were there in large numbers in perfect fitness, and showed the peculiar characteristics of the breed for general and special purposes. There was not another class of sheep that needed so little work to commend them to visitors. Only one question was asked, and that was: "What breed of sheep are these?" When told that they were Dorset Horns, the visitor went away with a most impressive picture before him of the wonderful value of this breed of sheep for raising lambs. The object lessons were all that could be asked for, and the information gained was most satisfying and lasting. It was not necessary to ask, "Are these mutton sheep?" for there they stood the very pictures of the finest meat animals. It was not necessary to inquire if they were wool sheep, for they were covered with wool of medium quality; not covered as the Merinos exactly, but with perfect covering wherever a sheep needs to have wool.

No one doubted but that he could take the Dorset Horn home with him and have them do well, for they were not an artificial sheep in any sense whatever. They had every appearance of being a practical, home sheep, ready to respond to such accommodations as the commonest farmer could give, without coddling or disappointment. In short, they recommended themselves without indorsement, without affidavit.

It is an act of justice to all exhibitors of these sheep, to say that they did not resort to deceptive methods—tricks as some call them—to mislead visitors. This was a very conspicuous and unusual practice with livestock exhibitors, especially sheep.

The one quality above all others, and they lacked not one, that characterized the Dorset Horn sheep from other mutton breeds, was that of fecundity, and this the exhibitors made a striking feature of their exhibits. It is one of the, to some, curious facts that the Dorset ewe will take the ram at any time, and that she will have doublets, and even triplets, twice a year with great regularity and uniformity; and that she has such milk, and hence motherly qualities, that, with half a chance, she will raise her lambs without fussing or failure.

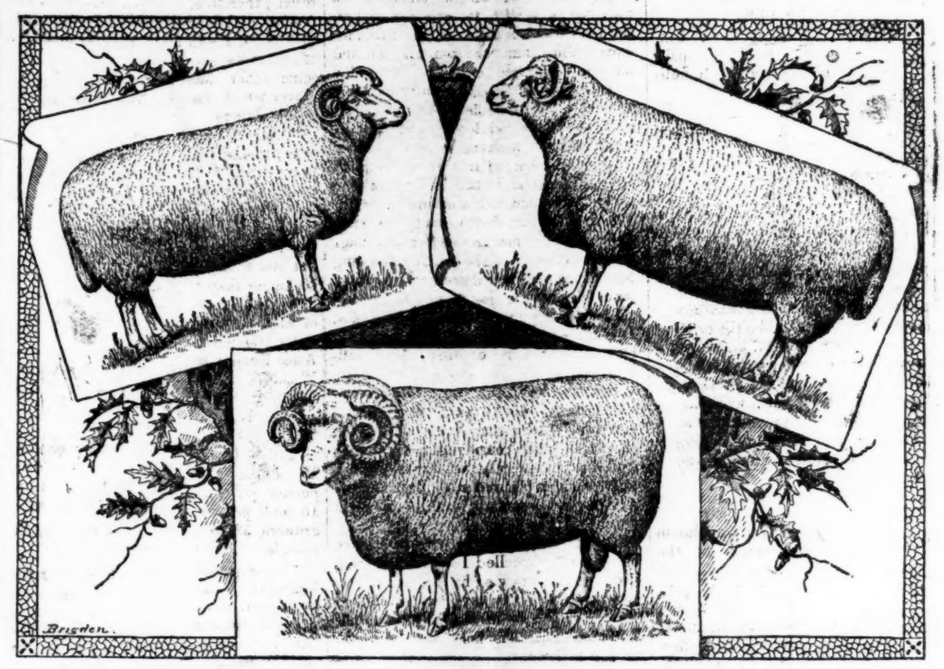
The accompanying cut represents a trio—a ram and two ewes, a part of the exhibit of the Hon. John A. McGillivray, Q. C. (The Queen's Councilor) of Ontario. He is one of the officers of the Dorset Horn Sheep Breeders' Association of America, and is one of the largest and most enthusiastic breeders of these sheep in America. He really believes in Dorsets and in mutton lamb raising. His exhibit was the largest at the Columbian. It was not hard to find his show pens, because there was a crowd about them all the time. More than that, there were often another crowd waiting for those in front to move on, so it could see what was the matter. And such a sight was never before seen in any show pens in this country. One would have to stop and think if he was really at a fair or at home in the breeding barn, for there were lambs, a great lot of them, enough to give one to every ewe in the pen and some to spare; lambs 10 weeks old that would weigh 50 pounds; lambs two weeks old, lambs a day old, and new lambs, and not yet dry. One ewe stood as real mother to a pair of triplets six months old, and a pair of new-born lambs at the teat. She was the finest picture of fecundity that was ever seen. It was a great show worthy of the Columbian World's Fair at Chicago. Nor did this one exhibit differ so greatly from others, save in the numbers. The whole thing was so natural that there was nothing curious or mysterious about it. Nobody doubted the reality of what he saw. It was just a pen of breeding ewes having lambs on a fair ground to show what Dorsets were like and what they could do. Nobody went away wondering if those grand ewes were breeding ewes; no one tried to make themselves believe he had seen a lot of fancy, fixed up, barren show sheep. The lessons of such an exhibit were fine and far reaching.

The Autumn Care of Sheep

Is worthy of the most careful consideration, since it is the preparation of the flock for the long Winter months, that by slow degrees comes with its trying storms, pinching cold, and especially the change of food. It is a fact that the change from grass to any feed is a trying ordeal to all farm animals, and to none more serious than to sheep.

In order to prepare the flock properly, there should be several divisions made. The breeding ewes should be the first, as they require special attention; then the lambs, who are just taking rank as individuals of the flock, should be put in a flock by themselves, that they may receive feed and attention suited to their tender age and inexperience in setting up for themselves. With these two divisions carefully made, the balance of the flock can be considered in accordance with their age, size, conditions and strength. The strong sheep should never be in the same flock with the weak ones, because they get the best of all the feed and push the weak and timid sheep from the racks and troughs, which still further reduces their condition. In every flock of a score of hearty sheep there will be some that lord it over the rest, often to the disadvantage of the whole; while these are the best, they are a serious detriment to the rest, and should be separated and put by themselves, whether as breeding sheep, feeding sheep, or growing lambs.

THE AMERICAN FARMER does not believe in wethers being kept over one or, at most, two years old. Wethers should always be by themselves, since they are strong and overbearing. With a flock divided up somewhat as above outlined, the flock will go into Winter with an even chance for coming out strong next Spring when they are sheared and turned to grass.



DORSET HORNS—A GROUP OF COLUMBIAN PRIZE-WINNERS, THE PROPERTY OF JOHN A. M'GILLIVRAY, Q. C., UXBRIDGE, ONTARIO.

The Finest Sheep Lands in America.

It was natural that the Western plains, with free ranges, should have attracted adventurous, pushing young men of the East who wanted to engage in wool growing on a large scale. It is just as natural now for enterprising, intelligent men who desire to raise mutton and wool to go to the cheap lands of the Alleghany Mountains, with the best markets in America, within a few hours run from the sheep-fold to the retail shops.

The whole Appalachian chain is a grass-growing region, suited to sheep, and the plateaus and valleys are meadow-lands and grain-lands. With mountain pastures for Summer and valley lands for Winter pastures, with grain lands for feeding ewes, the sheep raiser at once becomes the most prosperous and contented citizen. So long as these lands extending from Albany, N. Y., to southern Alabama, with the varieties of climate and natural facilities for sheep raising, and the transportation and market advantages, the question of sheep ranches need not give the least anxiety. The developments will belong to the East, not the West.

The Tone of the Ram Market this Fall.

Sheep breeders are to be congratulated upon the generally good averages at the sales of rams and ewes which we have reported in recent weeks. The general run of prices has been higher than for two or three years, to say the least. At the sheep fairs, too, prices have been satisfactory. With abundance of keep for the Autumn and Winter assured, breeding and other store stock could hardly fail to sell well, though the damage done to the corn crops must be some drawback, as it will diminish the money available for the purchase of stock.—*British Agricultural Gazette.*

Shelter for Sheep.

A number of practical experiments on this subject showed that "shed-wintered sheep eat much less and yet produce much more mutton in proportion to the quantity of food consumed than others fed in the open field, exposed to all varieties of weather, and inclined to take much more exercise."

It is safe to conclude that the same results would be found in this country, and that the effect upon the fleeces of protected sheep would be proportionately benefited.—J. SCATE, Transactions Highland and Agricultural Society, Scotland.

The Latest and Best on Suffolk Sheep.

Mr. Geo. W. Franklin, Secretary of the Iowa Suffolk Sheep Co., Atlantic, Iowa, has sent out the annual catalog; or, it might well be styled a manual, since it is a complete treatise on this breed that has challenged the breeds of the world on the soil of the United States, as the most practical all-around mutton and wool sheep for farmers who would make the most of their opportunities, feeds, time and abilities.

Although THE AMERICAN FARMER gave a cut of these sheep not long ago, and an article that was descriptive of the origin, uses and advantages claimed for this breed, we venture to quote some good points in the Suffolk sheep.

The Suffolk is a very prolific breed, as is shown by the following: Registered flock of this breed reported since 1887 the following number of lambs to each 100 ewes:

1887, 131.63; 1888, 133.67; 1889, 134.50; 1890, 133.14; 1891, 132.60; 1892, 125.22. The Iowa Suffolk Sheep Company in 1893, 174.2, and 1894, 166.04 per cent. of lambs.

WEIGHTS OF SUFFOLK SHEEP.

In ordinary farm condition, lambs 50 to 100 pounds; yearling 100 to 200 pounds, and two-year-olds 175 to 250 pounds.

Rams are usually heavier than ewes. Have lambs now four months old weighing 115 to 120 pounds. We have two-year-old ewes at present writing weighing 230 pounds, and rams 275 pounds.

Breeds of sheep with records of early maturity and fecundity that entitle them to public favor with mutton lamb raisers should look well to their honors while the Suffolks are able to show such wonderful performances.

Mutton in the Southwest.

In the meat shops of towns in New Mexico and Arizona the visitor from the East is apt to notice that the dressed carcasses of sheep have a tuft of wool still attached to the head and the tail. This is left by the butcher to assure the customer that it is mutton, and not goat flesh, that he is buying, for in these Territories many flocks of goats are reared and pastured by the small Mexican ranchmen to be killed for food for the poorer natives. Roast or stewed kid, with Chili-pepper sauce, is an esteemed dinner dish at the tables of many well-to-do American and Spanish-American citizens.

British Breeds of Sheep 50 Years Ago.

In an article which appeared in the journal of the Royal Agricultural Society in connection with the "Jubilee" show of the Society at Windsor in 1889, the following list was given of the breeds existing in the year 1839 and 1889 respectively. Those breeds marked with an asterisk in the list were even then becoming extinct, and these and others, as will be noticed, have died in the interval or have been amalgamated. The latter list, it should be added, was that of breeds for which prizes were offered at the Windsor show.

1839.—Leicester (Dishley), Lincoln, *Teeswater, Cotswold, Romney Marsh, Bampton Notts, South Ham. Notts, Irish (Polled), Southdown, *Wiltshire, Dorset, Portland, Exmoor, Dartmoor, Cornish, Ryeland, Dean Forest, Mendip, *Norfolk, *Cannock Chase, Penistone, Shropshire Morfe, Delamere Forest, Herdwick, Cheviot, Scotch Heath (Black-faced), Shetland, Welsh Mountain, Kerry, Merino.

1889.—Leicester, Border Leicester, Cotswold, Lincoln, Oxford Down, Shropshire, Southdown, Hampshire Down, Suffolk, Somerset and Dorset Horn, Kentish or Romney Marsh, Devon Long-wool, Exmoor, Wensleydale, Roscommon, Limestone, Cheviot, Black-faced Mountain, Herdwick, Lonk, and Welsh Mountain.

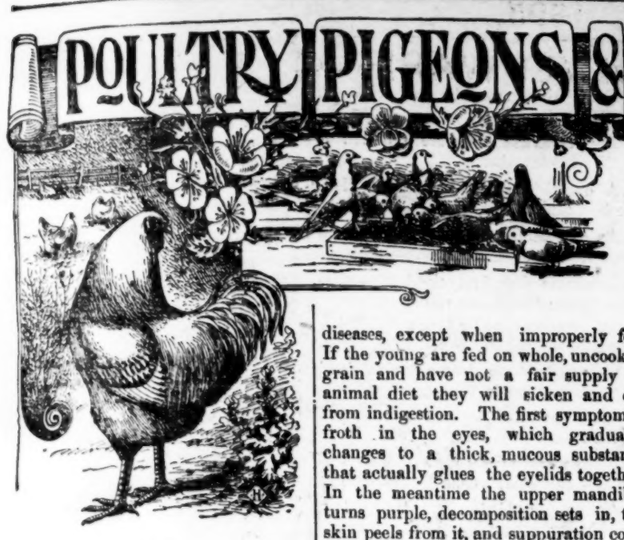
The breeds of the country appear to have been broadly divided from time immemorial into two main classes; viz., long-wools and short-wools. The former were, roughly, the sheep of the plains, the marshes, and the low-lying cultivated land; while the latter were the sheep of the downs, the forests, and the moors.

There are at the present time 11 Flock Book Associations in Great Britain, the Cheviot, Cotswold, Dorset Horn, Hampshire Downs, Shropshires, Southdowns, Suffolks and Wensleydale; the latter breed possessing two such societies.

The Columbia Desk Calendar.

For ten years the desk calendar issued by the Pope Manufacturing Company has held a unique place among business helpers. Each daily leaf during that time has taught its quiet lesson of the value of better roads and outdoor exercise, and especially the benefits of bicycling. The calendar for 1895, which is just issued, is even brighter than its predecessors in appearance, as clever artists have added dainty silhouette and sketch to the usual wise and witty contributions that have heretofore given this popular calendar its charm. It can be had for five 2-cent stamps from the Pope Manufacturing Company, Hartford, Conn., or from any Columbia bicycle agency.

POULTRY PIGEONS & PET-STOCK



DUCKS.

How to Breed the Different Varieties.

BY J. Y. BICKNELL.

The fact that ducks can be bred successfully without a bountiful supply of water has been so often demonstrated that no argument is needed to emphasize the fact. It is true that a pond or stream affords them a great luxury and is beneficial; still, neither is a necessity. One who is fond of ducks can keep a pair or a trio in a small yard, if animal food is provided and other proper food is furnished, but it will not do to crowd the old ones in a small inclosure if eggs are sequired. An unlimited number may be kept with profit if they have sufficient range of meadow pasture or swale. The latter is excellent feeding grounds for them. Ducks are great foragers, and when free to range over marshes they will thrive and furnish a great supply of eggs if no food is provided except what they can find among the bogs and puddles. In case they have liberty to roam they may be seen at early dawn and late in the evening seeking worms and insects, their natural diet, in which case they should be fed only once a day, in the evening; that will be sufficient for them, and following this course will induce them to return for the regular meal, when they can be housed and the eggs secured, which are laid at about daybreak. Before they are allowed to depart in the morning the keeper should see if there are as many eggs as the number of females; if not, each that has not laid should be kept in, unless it appears, by an examination, that she is not prepared to deposit an egg on that occasion. This examination is done by holding the duck down to the floor carefully with one hand, and with the other examine the under part where the egg is always located before it is discharged. There is no danger of a mistake, for the egg can be discovered if there, as easily as a "borrowed" apple in a boy's pocket in the school room.

Keep those in that have not laid, but give them their liberty as soon after as possible. Remember, the dawn of day is the time when their best food is secured, and the early worm in this case should have an opportunity to get caught.

If not housed at night ducks will all through the early part of the season drop their eggs promiscuously about, in the fields or water, usually the latter if they have access to it, regardless of revenue. If Madam Duck is left to follow her own instincts she will hie herself to some secluded spot before the season is over, build a nest, in which she will lay a dozen or more eggs usually, then faithfully cover them for four weeks, the period of incubation.

I have never been successful in rearing ducks with the parents, for the mother duck is clumsy, careless, and she will "gobble" all the food she can find if possible, regardless of the wants of her young; and still she manifests a strong affection for them, even fighting for "protection" from an intruder while she acts on the principle of "free trade" in the matter of food supply. She has never been able to harmonize these two planks in her platform.

I have been very successful in hatching and rearing ducks under hens, and I would advise this method.

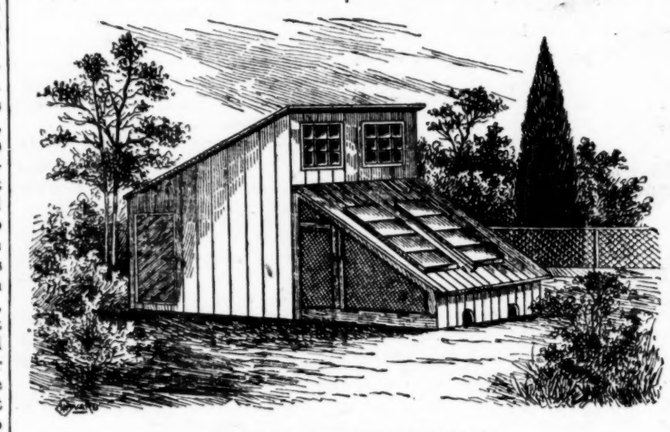
The character of the food has a very important bearing on successful duck culture. Soft food or animal food are indispensable, and both should be supplied.

My plan is to use equal parts of coarse wheat bran well mixed and stirred up in boiling water quite thick. Never feed raw mush prepared in cold or lukewarm water for any fowls or chicks, but be sure boiling water is used. The boiled-egg theory has long since become stale, because other food is less expensive and far better.

While whole grain, alternated with the soft food recommended, is capital for chicks, it should never be fed to ducklings till they are well matured. Small quantities at long intervals may not be injurious if animal food is given freely, but my advice is, stick to the mush, but don't make it soft and mushy. Don't forget the animal food for ducklings. If they cannot find worms in plenty provide them with any kind of animal food, by boiling livers, shanks or anything else, stir the food in the broth while it is boiling hot, and feed that as well as the meat. It often furnished me much amusement to take a garden fork and turn over the earth in a moist place where worms were abundant, and watch the little ducks eagerly rushing over each other after the "woms." They soon understand, and as soon as you start with fork in hand the rush will commence with no other call. Keep the young away from water, except enough to drink, till they are well fledged, and better success will attend you than by allowing them free access to stream or pond earlier. Ducks seldom contract diseases, except when improperly fed. If the young are fed on whole, uncooked grain and have not a fair supply of animal diet they will sicken and die from indigestion. The first symptom is froth in the eyes, which gradually changes to a thick, mucous substance that actually glues the eyelids together. In the meantime the upper mandible turns purple, decomposition sets in, the skin peels from it, and suppuration completes the work, when death ensues. Reader, did you ever experience this trouble, and wonder what caused it? Hard food caused it.

Old ducks will sometimes have froth in their eyes, and it is from the same cause. The food recommended for young is as good for the old ones, and will give the best results.

As to the proper kind to select of the four leading varieties, Rouen, Aylesbury, Cayuga, or Pekin, choose which best suits your fancy, regardless of the puffing that any breed has had on paper. If a large run can be furnished with a large



PERSPECTIVE VIEW OF POULTRY HOUSE.

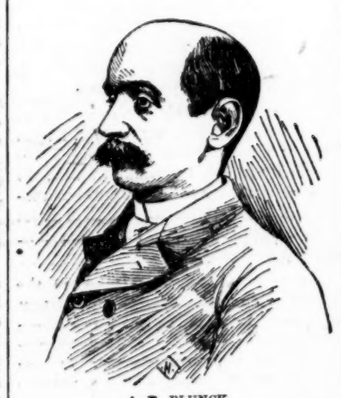
or small supply of water, either will be profitable; if only a small yard can be furnished the Rouens or Cayugas are more suitable, because the plumage will not be so objectionable as either of the others, which are white. Even the white plumage of a duck will be kept quite clean if only enough water is at hand for it to wash in. It is astonishing how clean it will come out of a small pool, even if it appears to be quite foul. The Pekin, while a grand variety, has been over-estimated ever since it made its appearance. By very many it is supposed to be, the largest, and while it appears to be from the looseness of its feathers, which are fluffy and do not lie down to the body like those of all others, the same care will produce in either of the others an average of from two to four pounds to the pair over the Pekins.

Noted Fanciers.

A GAME FANCIER.

Among the fanciers of this country no name is more prominent or favorably known than that of A. E. Blunck. For a number of years past he has been extensively engaged in breeding Exhibition Games and Game Bantams. His large ranch at Johnstown, N. Y., is overflowing with prize-winning birds, and when he enters them in the show room he is a sure winner of the blue ribbons. Time, money and perseverance have been lavishly used in building up the reputation of his yards, and nothing is neglected to retain the excellence which has been his reward.

Mr. Blunck is associated with Mr. J. H. Drevenstedt as publishers of *The American Fancier*. This paper was first presented to the poultry fraternity about one year ago, and it is now considered as the greatest advocate and authority published on poultry and pigeons. Mr.



A. E. BLUNCK.

Blunck is also publisher of the Johnstown *Daily Republican* and the Fulton County *Weekly Republican*.

A SUCCESSFUL BREEDER.

The State of Maryland has many breeders of fine poultry and pet stock. Among them may be mentioned Mr. S. M. Kefauver, of Middletown, Md. He was born and raised on a farm near where he now resides. During his early life he was attached to the poultry on his father's farm, and gave them his constant care and attention. After he attained manhood and had a farm of his own, he began poultry raising on a large scale.

During the last few years he has added numerous varieties of thoroughbred fowls for fancy purposes. He has at present 53 varieties of poultry and water fowls on his place.

During the last year he exhibited at six fairs and won nearly 1,000 premiums. The highest number of premiums won at a single fair was 178. The principal places he exhibited were at Leesburg,

S. M. KEFAUVER.

Va.; Timonium, Baltimore Co., Md.; Rockville, Md.; Alexander Island, Va.; Frederick, Md., and Cumberland, Md.

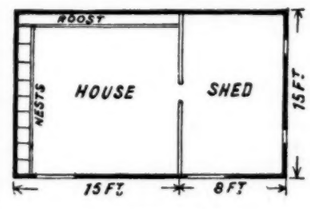
D. LINCOLN ORR.

We were pleased to meet Mr. D. Lincoln Orr, of Orr's Mills, N. Y., who paid a flying visit to this city during the holidays. Mr. Orr was on his way home from the annual convention of the American Poultry Association, which was held in Kansas City from the 18th to the 22d of December.

Mr. Orr is an extensive raiser of thoroughbred stock, and has had wonderful success in the leading shows of the country. His favorite birds are Light Brahmas and Barred Plymouth Rocks. He has a large broiler plant attached to his farm which yields a bountiful income to his growing enterprise. This reminds us that he is seriously thinking of starting a factory for the manufacture of a new incubator and brooder. The plans are simple in construction and easily operated. We have no doubt but that it will prove a success. The one thing for which Mr. Orr is so well known, is his Clear Grit for poultry. The grit is manufactured by him at his mills from limestone.

House for Layers.

The plan shown in illustration is an excellent one for laying hens in Winter. The covered shed is just the place for



GROUND PLAN.

the hens to scratch in during bad weather. The arrangement of roosts and nests are shown in the ground plan.

For a flock of 25, the house should be 15 feet square, and the shed 8 by 15 feet. This will allow about 14 square feet to each fowl when confined. The floor is made of rough boards and covered with three or four inches of dry sand and dirt; the floor of shed is covered with straw or leaves for the hens to scratch in. The roof may be made of shingles, or boards covered with tarred paper.

The Fighting Gander.

There are few better fighters than a goose, or a gander more particularly. Those ragged white Russian geese bite like bulldogs. It is no mere peck with them; they bite and hang on. The common old farmyard gander is a capital fighter when he is driven to it. At a certain place in Scotland there used to be a caged golden eagle. He preferred to kill his own dinner, and it used to be a cruel sport to watch him dispose of any unfortunate hen or guinea fowl that was put into his cage.

They tried him, I believe, with every sort of domestic poultry. Ducks, peafowl, turkeys—the eagle was master of them all. He had no trouble in finishing them off, no trouble even with the "bubbly-jock." But at length they tried him with a gander; but he could make nothing of it. The gander crouched into a corner, drew back his head, presenting nothing but a broad, spade-like bill, from whichever quarter the eagle tried to attack him.

The eagle fumed and fretted, and grew very angry; he made desperate attempts to take the gander in the flank, but the wise old bird defeated them all. In the end they had to give the gander his liberty, as the reward of his courage, and to satisfy the eagle with the much more succulent dainty of a young turkey poult.—*Macmillan's Magazine.*

Golden Pencilled Hamburgs.

BY J. W. CAUGHEY.

The Hamburg fowl is one of the oldest of our domestic poultry, a variety combining wonderful beauty of plumage with excellent laying qualities. They are not usually considered a very hardy fowl, especially so in cold climates, yet in the South, where mild and brief Winters are the rule, they are considered equally vigorous with those varieties ranked as hardy breeds, and yield as layers surprising averages only equalled by our famous Leghorn and Minorca breeds.

The first high-class specimens of this beautiful breed I saw at the exhibition of poultry at Pittsburg in 1875, and I thought at the time and to this day consider them the prettiest plumaged of any high class fowl now kept or bred for fancy and actual utility. Mr. Foster, of the firm of Foster Bros., was the possessor of the winning pens, having at least four grand trios of them entered for competition.

The Golden Pencilled Hamburg has a bright chestnut color as rich and brilliant as possible, the pencilling being sharp and distinct, and of a good sound black color. The hackle feathers on the neck should be clearly and sharply defined, giving a beautiful, striking effect. The bars of black in the hen should be as clear and sharp and as numerous, with separate spacing (not blurred or come together), as possible to obtain them. In many good specimens the pencilling is a study for any artist to correctly imitate. The male bird is of a deeper chestnut-golden color than the hen, not too red nor again too pale a yellow or golden color. The tail sickle feathers are a greenish-black—beetle-black, as they might be called, with the outer edge of chestnut color, making a very striking and a quite beautiful contrast between the body color and tail. The difficulty often experienced in Hamburgs this color (I mean like the Buff Cochin) the sun's rays often bleach it from a chestnut color to a washed-out golden yellow, making them appear quite defective to an experienced eye or judge of the breed; marring them as exhibition specimens, although capable of breeding from them without detriment or fault to the offspring.

Both the male bird and hen have the broad rose combs with spike-shaped taper to the extremity at the back of the head, and large, round wattles with clear white lobes entirely white or creamy-white, no trace of red about the edges, as you will very often experience when breeding Hamburgs of any color.

If you live South, by all means give the Golden Pencilled Hamburg a trial. Let it tell its story of beauty and its excellence as a steady layer, and my word for it, you will be infatuated and soon be the admirer of this noble and beautiful variety of fowls.

Essay on Hens.

On the subject of hens a boy writes: "Hens is curious animals. They don't have no nose, nor no teeth, nor no ears. They swallow their wittles whole and chew it up in their crops inside of 'em. The outside of hens is generally put inter pillers and inter feather dusters. The inside of a hen is sometimes filled with marbles and shirt buttons and such. A hen is very much smaller than a good many other animals, but they'll dig up more cabbage plants than anything that ain't a hen. Hens is very useful to lay eggs for plum puddings. Skinny Bates eat so much plum pudding once that it sent him inter the collery. Hens has got wings and can fly when they get scart. I cut Uncle William's hen's head off with a hatchet, and it scart her to death. Hens sometimes make very fine Spring chickens."—*Australian Poultry Gazette.*

Ostrich Farming.

An ostrich farmer in southern California says the ostrich farming experiment is not an entire success, although not a complete failure. He was one of the first to engage in the business of raising the big birds for their feathers, and expected to realize a big fortune quickly. He says that, while much money has been derived from the sale of feathers, the birds do not increase as rapidly as was expected. Then, very many are so vicious that is impossible to remove the feathers without killing them. He still hopes that, as the farmers gain more experience in the management of the ostriches, the business may become as big a success as was at first expected.

A Substitute for Ice in Skating.

Two San Francisco men have invented a compound that they claim will take the place of ice for skating purposes. Exactly what the ingredients of their compound are they do not choose to say, but the body of it is sulphur. There are four other ingredients. The substance itself is of a pliable and elastic character. The surface is as slippery as ice, and though of an oily smoothness will not grease the clothing of those who happen to fall upon it.

The composition will be spread over thin iron plates to the depth of an inch. These plates will rest upon brick buttresses, and underneath throughout all the area gas jets will be arranged 14 inches apart. These will be used for melting the compound and giving it a new surface when the surface becomes roughened. To melt it will be all that is necessary to accomplish this. The sand and dirt left from the skaters' boots will sink in the lighter liquid, and when the substance hardens again the new surface will be perfectly smooth and clean.

Ventura County sends to the San Francisco Chamber of Commerce potatoes measuring 13 inches in length, and weighing as high as three and one-half pounds.

CRIMSON CLOVER.

Prof. Emery Gives Some Additional Facts Concerning It.

EDITOR AMERICAN FARMER: In last issue of THE AMERICAN FARMER you printed an article of mine on Crimson Clover in 1894. I am sorry to have been obliged to reduce the amount of value per acre, but on measuring the field carefully was obliged to do so. The total figure, however, is about right if our straw had been credited, as it should be, at about the market price for hay.

Here is the correction:

A recent press article gave the crop of seed for this year grown at the Experiment farm at $44.61 per acre. When this statement was made a portion of the field recently added was unintentionally omitted from the calculation of the yield. We hasten to make the correction. This increased area would reduce the value of seed to $31.86 per acre. However, if the straw were included, the total value would be about as first reported.

The crop of unhulled seed in 1893 was 1,956 pounds per acre, which at the low price realized this year would amount to $58.68 per acre, or $18.07 per acre more than the crop for 1894 as first reported.

The loss by weather-beating amounted to $14.43, which is enough to emphasize the necessity of employing every means possible to save the crop in good weather. On this point the Experiment Station expects to have a seasonable article for next Spring before the seed is ripe.—F. E. EMERY, Agriculturist, North Carolina Experiment Station.

Already one inquiry has come to me about this clover from Grass Lake, Mich.; therefore, as many others of your readers may be interested in it and wish to grow it, I will give you the substance of inquiries and answer together with some other facts concerning crimson clover which may not have been seen in your columns.

"Can you tell me where I can procure some of the seed, and at what price per pound? Do you think it could be grown in Michigan? I take it by your letter that this clover is not a Winter crop, or rather that it will not stand the Winters here as our [red?] clover, but has to be sown in Spring, and lasts no longer than to produce one crop."

Crimson clover seed can be purchased of any of the leading seed dealers, as Peter Henderson & Co., New York; W. Atlee Burpee, Philadelphia, Pa.; T. W. Wood & Sons, Richmond, Va.; David Landreth, Philadelphia, Pa., etc. Growers who advertise fresh American seed are, Wynkoop Bros., Milford, Del.; A. N. Brown, Wyoming, Kent Co.; Del., E. H. Bancroft, Camden, Del. A few pounds purchased of dealers costs 10 to 15 cents per pound. By the bushel, of growers, $3.25 to $5 per bushel of 60 pounds.

Probably crimson clover will grow in Michigan as a Spring-sown crop. It is an annual, like oats, corn, barley, etc., and will not come again from the roots like red clover when it has been cut after blooming. If cut before bloom it probably will make a strong effort to grow enough to produce more seed. Michigan Winters are too cold for any growth to take place, as it does here, and wherever sowing in Fall is practiced. Professors in the Middle West have advised to go slow with this clover, and I would suggest its trial on different situations and at different dates in Spring, on a small scale, before investing very largely in it there. Some small plats of crimson clover have grown to perfection in southern Somerset County, Me., the past season. Sown middle of June and began to bloom about the last of August. Some of this clover was three feet tall.

Crimson clover hay has been digested at this Station by one goat and one sheep. The average amounts of protein, carbohydrates and fat digested from 100 pounds of this hay compares favorably with that of alfalfa, alsike and red clovers, as seen below in the abstract of Bulletin 87d, North Carolina Experiment Station.

The composition of crimson clover hay and the coefficients of its digestibility show it to be a highly nutritious food. To bring out more clearly its nutritive value comparison is made below with other well known and highly prized leguminous plants in a table showing the actual amounts of digestible nutrients in 100 pounds of dry matter of each.

	Protein.	Carbohydrates.	Fats.	Ratio 1 to
Alfalfa hay, average of O'Brine and N. Y. Agri. Ex. Station	10.55	44.31	1.35	4.52
Alsike clover hay—Jordan	9.31	46.96	2.76	5.78
Red clover hay—Armsby	6.64	42.64	0.80	6.73
Crimson clover hay (this experiment)	12.45	43.70	1.25	3.76

* * * * *

This clover will thrive on land in moderate condition, but, like some other forage plants, will pay best where given a rich soil.

The high protein content, large proportion of amides and narrow ratio are especially noticeable in this hay. It is so rich that for any use it may well be fed with some such fodder as straw, meadow hay, or cottonseed hulls. When fed for production of milk, the addition of corn, or corn and oats, will tend to widen the ratio, and probably add to the good qualities of the product.—FRANK E. EMERY, Raleigh, N. C.

A. C. Williams, of Iowa, a very prominent breeder of Poland Chinas in large numbers, says: "The keep of my hogs, when the ground is not frozen, is blue grass, clover, and artichokes. Forty head of hogs and pigs may be kept without other food on an acre of artichokes from the time frost is out of the ground until they grow again, and from Oct. 1 until the ground freezes again. They produce more hog food per acre than any other crop I am acquainted with, and the hogs will harvest the crop themselves. Hogs taken from artichoke pastures to blue grass and clover will not root up the sod, as they are free from intestinal worms, constipation, indigestion, and fever, caused by feeding corn in Winter. They also produce an immense quantity of tops, of which cattle, horses, and mules are very fond, and which makes excellent food when properly cured."

Mr. J. P. Vissering, of Melville, Ill., offers to send free to any of our readers an essay on planting, culture, harvesting, and use of the artichoke. Write him.

THE APIARY.

Hummings.

The busy bee hath ceased to fly;
No longer he's a hummer,
But sitteth down to masticate
The sweets he stole last Summer.
—*Smith, Gray & Co.'s Illustrated Monthly.*

Honey is scarce but it does not seem to bring over 16 cents in city markets.

The hives may be left out until the Winter is set in for good, as a late fly will help the bees.

Glossometers are complicated instruments which the French are using for measuring bees' tongues.

No new varieties of imported or domestic bees seem to give as universal satisfaction as the Italians.

Bees can Winter on sugar sirup and commence breeding in the Spring just the same as if they had honey.

Go slow in adopting new hives, or making any other radical changes, unless there is a good reason for so doing.

A warm, dry cellar, temperature from 45 to 50 degrees, is best for wintering. A thermometer is always necessary, and good ventilation imperative.

Should any colonies be lacking in stores now take out the empty combs and set in frames of honey until they have enough to last them through the Winter.

The best way to keep honey from candying is to seal it in tight jars, the same as fruit. This is the way that the bees do, and is the only safe way. It should be thoroughly heated before putting up.

Beekeepers are just beginning to see that it is better and wiser to have their addresses and essays published in the bee journals and agricultural papers than to consume valuable time at conventions, reading the same.

If without honey, feed granulated sugar, prepared by adding twice the weight of sugar to boiling water, and stirring it industriously until it begins to boil. When cool, add one-fifth honey, and it will not granulate.

Nothing beats in appearance bright new sections of white wood. The only desirable addition is the raiser's name neatly placed on the side, with a rubber stamp, or on a printed label. This gives the buyer a confidence like Sam Weller's when he "knowed the lady what made the weal pies."

If a hive of bees is expected to winter well without feeding, it should contain 40 pounds of honey or more at the beginning of the Winter, but the seasons vary so that one Winter while a small colony might exist upon 15 or 20 pounds of stored honey, or even on less, a large colony may use up 35 or 40 pounds in a different season. The only sure way is to weigh them or open and examine the comb to see if they have honey left. If they have not, give good sugar sirup or sugar candy at once.

Mrs. Harrison tells how to keep combs from moths in *American Bee-Keeper*. "A year ago last Spring we put a number of hives containing combs into the cellar. In a week's time we looked them over carefully, destroying all grubs. The third time we looked them over we failed to find one, not a moth developed in the cellar, and not one entered, as the windows were covered with wire-cloth. There has not been increase enough to use those combs this Summer, and there has not a grub appeared in any of them."

Prof. Gatter has exhibited at the Bee Exhibition of the Austrian Horticultural Society, in Vienna, a thriving hive, the members of which are governed conjointly by two queens, and the bees apparently approve of the innovation. Nay, what is still more remarkable, the two monarchs get along most satisfactorily and without the slightest friction. Prof. Gatter has just received the first prize for his sensational exhibit, which is attracting crowds to the bee show, and the members of the apicultural and horticultural societies of Vienna are proud to think that no such extraordinary spectacle as this was ever witnessed or recorded in the history of bees.

An experiment for sheltering bees from cold by burying the hives was tried in the following way: Holes were dug, the hives, stocked with honey, placed in them, and the soil packed around them. In the first experiment, 1890–91, the bees died from insufficient food. In the subsequent trials in 1892–93 and 1893–94, more honey was supplied and the result proved successful, a much smaller proportion of the bees being found dead, after three months' interment, than in the hives that had wintered above ground. There appeared to be no loss from suffocation. But this way of wintering is not new. It has been tried by a few for the past 30 years, and it has never come into general use, probably because wintering in caves and cellaring are better methods.

If there are queen cells in the brood combs, and no queen can be found, it is a sure case of a queenless colony. A colony that is without a queen in the Winter or Spring, if discovered early, may have a new queen given it, but if its condition is not ascertained until late in the season the bees had better be given to a weak colony that has a fertile queen, or perhaps divided between two or more other weak colonies, as introducing a new queen then may result in her brood not obtaining sufficient food, from lack of working bees, or in the young brood hatching out too late to store honey when it is most abundant. But a colony may have a young queen that has not yet begun to lay eggs, in which case she would do better than a new queen, and the colony should not be divided unless very weak.

Celery blanches more rapidly and evenly when the stalks are growing than when its growth is checked. Stand the roots upon the cellar bottom of earth, and see that they have a moderate amount of moisture. When the roots are taken off before setting out they may continue to blanch, but they will not make any new growth, and the older stalks, if they whiten out before rotting, will still be tough and unfit for eating.

Spraying potatoes has been tried with good success in Ireland. Of two lots in one field, both exactly the same in every other respect, the sprayed plot produced 50 stones of potatoes, while the unsprayed only produced 28 stones.

Established - - - 1819.

76TH YEAR.

THE AMERICAN FARMER.

"O fortunatos nimium sua si bona norint agricolas."—VIRG.

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OUR NEW CLUB OFFERS.

We have arranged to club with the *Weekly Witness* of New York. Its price is $1 a year when taken alone. The *Witness* is a 16 page weekly paper and among its contributors Rev. Josiah Strong, D. D.; Rev. John Hall, D. D., L. L. D.; Rev. Robert S. MacArthur, D. D.; Rev. Theo. L. Cuyler, D. D.; Rev. M. C. Lockwood, D. D., of Cincinnati; current weekly sermon by Dr. Talmage; Sunday school lesson by Dr. George F. Pentecost, etc. It is one of the strongest and most popular family newspapers published.

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These offers are open to all subscribers in connection with THE AMERICAN FARMER. Neither the *Weekly Witness*, *Sabbath Reading*, nor *At Home and Abroad* can be furnished by us without a subscription to THE AMERICAN FARMER for one year accompanying the order.

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We will send THE AMERICAN FARMER and any other paper or magazine in the country at a reduced rate for the two. The following is a partial list of the periodicals that we club with:

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Pansy	$1 00	$1 25
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Worthington's Magazine	2 50	2 80
Babyland	50	90
The National Tribune	1 00	1 25
American Gardening	1 00	1 25
Godey's	3 00	3 00
The Young Sportsman	50	85
Our Illustrated Press	50	75
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TO ALL TO WHOM THIS PAPER SHALL COME.

Greeting: This paper is sent you that you may have an opportunity to see it and examine it, with a view to subscribing. We ask you to compare its contents, objects, and price with those of other papers, and see if you do not come to the conclusion that you ought to have it; that you cannot afford to do without it. We can assure you that if you send in your name for one year that you will find it one of the most profitable investments that you can make. We hope to make and keep it so interesting that you will think that every number more than repays you for the subscription price for a year. Please call your neighbor's attention to the paper.

THE amount of capital now in Southern cotton factories is now estimated at $105,000,000, and 70,000 looms and 3,000,000 spindles are at work. Let the good work go on.

QUITE a number of the Eastern growers are selling chicory on its merits, and advertise "Pure chicory" as freely as they do coffee.

SIGHTS AND SCENES OF THE WORLD.

Part 18. ***Number 18.***

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CUT THIS OUT.

OUR 76th YEAR.

With this number THE AMERICAN FARMER begins its 76th year of activity and usefulness. When we were born, the century was but 19 years old. The country had just passed through the Second War for Independence, the bulk of the population was still along the Atlantic Coast. Virginia, Pennsylvania, and New York were rivals for the position of the first State in the Union. Kentucky, Vermont, Tennessee, Ohio, Indiana, Illinois, Louisiana, Mississippi, and Alabama were as new States as Wyoming, the Dakotas, Idaho, and Montana are now; railroads were discussed very much as we are now talking of flying machines. Steamboats were having a tough time in becoming really practical and useful appliances; friction matches were only dreamed of by a few "visionaries"; the telegraph did not even exist in the brain of its inventor; thrashing machines, mowers and reapers were vague imaginings of men who hated the drudgery of the flail, scythe, and sickle, and a man who would have tried to sell a washing maching would have been laughed out of the neighborhood by the strong-armed, bristling house-wives.

Then 99 out of every 100 subscribers to THE AMERICAN FARMER lived in roomy and drafty log houses, the more pretentious built of hewed timber, with a wide, open hall between the two sections, where they deposited their saddles and bridles and similar gear. Everybody went horseback on errands of business and pleasure; they plowed their land with heavy, wooden plows, cut their grain with sickle or the cradle, and thrashed it out with flails or by trampling horses. Their wives cooked their generous meals at open fires in pots swinging from cranes and in "Dutch ovens." There may have been a few rude cooking stoves in New England, but none outside that section. The clothes that men and women wore were manufactured from the wool, cotton, and flax grown upon the farm, and picked, seeded, washed, retted, broken, heckled, carded, dyed, spun, woven, cut, and made up inside its boundaries.

American cotton growing was then in its infancy. The gin was but 28 years old, and very crude, and much of the seed was still removed by hand. Sea Island cotton then brought 47 cents, and other cotton 27 cents a pound. A yard of calico was worth more than a bushel of wheat, whereas now, even at the present low prices, a bushel of wheat will buy from eight to 12 yards.

THE AMERICAN FARMER was the first agricultural journal started this side of the Atlantic. There were few, indeed, in the world then. Farmers did not take at all kindly to "book learning" in agriculture. They had good reason for viewing it with suspicion. Much that was then written of this as of other sciences was of the empirical, shallow, misleading nature of most of the stuff that to-day is written about the financial problem. Like the bulk of those men who now want to talk and write about money, men then did not and would not write from actual, practical knowledge, and give digested results of careful experiments, but built up great theories and visionary plans on a slender basis of a few facts which they did not rightly comprehend.

We are proud to say that THE AMERICAN FARMER never had any affiliation with this class. From the very first it was intensely practical. It wanted exact facts and demonstrated results, and then let the theories follow. It always addressed itself, and represented, as it always will address and represent, the plain, every-day, actual farmers, who are accustomed to making a success of their farms, and coming out at the end of the year with a balance on the credit side. Whatever led directly to this result was good farming, no matter what it might be theoretically, and whatever did not do it was poor farming, however beautiful it might be theoretically.

Our highest aim is to continue steering by this safe chart. We want to discuss with the plain, working, thrifty farmers of the whole country, the things that are of direct importance to them in getting the greatest profit out of their farms, in getting the most success and happiness out of life for themselves and families, and in developing themselves to the highest plane of American citizenship. THE AMERICAN FARMER has to-day a much larger circulation than it ever had before in its three-quarters of a century of existence. It goes to every part of the United States, and is, as its name implies, a thoroughly National paper. It is interested in the welfare and success of every man who tills the soil under the kindly protection of the glorious Star Spangled Banner. It represents him, hopes and works for him, and wants him to consider it his personal friend, counselor and well-wisher. It wants him to communicate through it with all his brother-husbandmen as to any matter which concerns success in their common vocation, to discuss practical matters with them, so that all may have the full benefit of the experience of each other. We feel that in this way we have been of the highest benefit in the past, and we want to feel that we are continuing and extending this usefulness.

To our half-million readers a Happy New Years!

RUSSIAN COTTON.

Russia is determined to raise her own cotton and supply some to the world also. Immediately upon acquiring possession of the fertile plains of the Trans-Caspian region, she set about converting it into a cotton-producing country. She sent agents to this country to study our system of cotton growing, and they learned and applied their lesson so well that 600,000 bales a year are now produced on what was 10 years ago the roaming ground of the robber Turcomans. This cotton is inferior to ours in fiber, but superior in color, owing to its being raised on irrigated lands. How much farther this production can be increased is a disputed question, many claiming that the limit has been nearly reached, owing to the impossibility of extending the irrigation system. The State Department has just received information that Russia has imposed a duty equivalent to four and a half cents a pound on all imported cotton. The duty has heretofore been one cent a pound. She has gone farther, and granted a bounty on manufactured cotton exported from the country. In 1890 we sent nearly 100,000,000 pounds of cotton, valued at $10,000,000, to Russia. In 1892 this had fallen to 67,000,000 pounds.

SCIENCE demonstrates that oleomargarine is far inferior to butter for human food. Everybody knows, or ought to know, that raw, uncooked fat taken into the stomach is difficult of digestion. Science tells us why it is so. In the first place, cooking is necessary for almost all kinds of food, in order to burst the cells and expose their contents to the action of the gastric juices. In the next place, butter melts in the stomach at from 89.6 to 94.5 degrees, or below the ordinary temperature of the body. Thus no effort is necessary to get it into shape to mingle freely with the liquids there and form a digestible emulsion. On the other hand, oleomargarine requires from 105 to 108.3 degrees to melt it, and this requires a great effort, and the substraction of heat from other parts. Even then it does not readily emulsify. Next, oleomargarine is liable to contain disease germs from the flesh of animals, which are destroyed when the flesh is cooked, but are present in all their vicious activity when raw oleomargarine is taken into the stomach.

AT its annual meeting the Missouri State Horticultural Society adopted by a practically unanimous vote resolutions reciting the injury to American fruit-growers of admitting apples from Nova Scotia and Canada almost free of duty, and memorializing Congress to restore the rates of duty of the McKinly Bill. Those were 25 cents a bushel on green apples, and 2 cents a pound on dried, desiccated or evaporated. The Wilson Iniquity reduced the rate to 20 per cent. all around, which is practically no duty. Singular that we cannot grow all the apples this country needs in our own orchards. We presume that some Free Trader will raise up to proclaim that we cannot raise as fine apples, or as many different varieties here as abroad, and that the manufacturers of apple pies, "apples sass," and pure cider vinegar need the foreign product to mix with the home varieties, in order to produce high-class goods.

ONE hundred and ten years ago eight bags of cotton shipped to England were seized, under the strict commercial laws of the day, on the ground that so much cotton could not have been produced in the United States. The next year—1785—14 bags were shipped, and by 1791 the export had risen to 842 bags. By 1832 the export had risen to 8,000,000 pounds. The cotton gin was invented by Eli Whitney in 1793.

THE NICARAGUAN CANAL.

The Nicaragua Canal will be a benefit to the world, more particularly to the United States, and most particularly to the South and California. It will at once put our Gulf country on the path of the world's highway, with a consequent and great increase of their commercial importance, and a marked great decrease in freight rates. As everyone knows, freight rates are governed by the quantity going in a certain direction. The more that is carried the lower the rates. For example, rates are proportionately much cheaper between New York and Liverpool than from New Orleans. But let the canal be built and there will be 50 vessels from New Orleans to Liverpool where there is now one, and all the Gulf ports will share in this advantage. Products now sent to New York for exportation, will again seek Southern outlets, and these will rapidly grow in importance. The next greatest benefit will be to the Pacific Coast. That portion of the country now ships about 1,800,000 tons of wheat and flour a year to Europe and the ports on this side. It is claimed that the cost of shipment will be reduced by the construction of the canal $2 a ton, which will be a saving in this respect alone of $3,600,000 to the wheat growers of the Pacific, since they can only get for their grain the price in the market where it is, from which they must deduct the price of carrying it thither. Now it takes from 25 to 30 days to send goods from New York to San Francisco by freight trains, from 45 to 50 days by steamer, and from 110 to 120 days by sailing vessels. The canal would shorten the mileage by water several thousand miles. Of course, all the Pacific Railroads, and those generally running east and west, are mortally opposed to the canal, and doing all that they can to defeat it.

THE Supreme Court of the United States has decided in the Massachusetts cases that "substitutes designed to look like butter are deceptive and fraudulent, and the States may exclude them without encroaching on the right of Congress to regulate Interstate commerce." This fills the oleomargarine people with consternation, as it should, since it gives every State the right to protect its people from the fraud. One result of this decision has been to make the oleo makers migrate from New York and other Eastern States, which have rigid laws on the subject, to New Jersey, where the laws are less strict. George W. McGuire, the Dairy Commissioner of New Jersey, thinks the laws of that State are sufficient to suppress them, and has given instructions to his deputies to prepare cases for prosecution, wherever they can get sufficient grounds.

GERMANY'S exclusion of our beef is upon a mere pretext, as untenable in every way as that upon which she excluded our pork. There is as little Texas fever among our cattle as there was trichina among our hogs. The condemned cattle were all first-class animals, and the evidence did not support at all the theory of Texas fever. The whole thing is the work of the farming class, who want to shut off competition with America in the meat products. Denmark has joined in the exclusion, because she wants to curry favor with Germany for her own meat products. Denmark is so small that her competition would not be felt.

OUR Consul-General estimates that the quantity of wheat which will be sent to the European market this year from the new districts in western Siberia opened up by the Government railroad will be 15,000,000 bushels. This, he says, is only the beginning. The Government has limitless quantities of splendid wheat land in that section which it rents for $2.25 for 40 acres. Farm laborers receive 37 copecks—19 cents—a day during seeding time, and 55 copecks—28 cents—a day during harvest.

IF we could get our own consent to have the American farmer reduced to the vermin-infested sheepskin garments of the Russian peasants, the wretched disease-breeding hovels in which the subjects of the Czar live, and their miserable diet of sour rye bread and cabbage soup, we would become a blathering free trader, and advocate the removal of all duties on agricultural products. Just now we don't seem to be built that way.

UP to September the Scotch farmers had sent to this country from Dundee 31,745 long tons of potatoes, invoiced at $554,268. They get about $11.55 a ton, free on board, and pay 13 cents apiece for the sacks. The freight from Dundee to New York averages $2.85 a ton. The "Magnum Bonum" and "Bruces" are the favorite varieties for shipment.

GET UP CLUBS.

Now Is the Time to Get Your Papers Cheap.

EXTRAORDINARY INDUCEMENTS.

THE AMERICAN FARMER should be a regular visitor to every farm-house in the country. It is the oldest agricultural paper in America, it is one of the very best, the most common-sense and practical, it is exceedingly cheap, and it is a fearless, outspoken advocate of just treatment of the farmers at the hands of politicians and the Government.

We want every farmer in the country to take it, and we have devised a scheme which will give it to every one at a nominal price. The subscription price is 50 cents a year, and it is very cheap at that price.

But if two farmers will send their subscriptions together, we will give the two for one year for 85 cents, or 42½ cents each.

If three will send together, the price will be $1.25, or 41⅔ cents.

If four join together the price will be $1.50, or 37½ cents each.

If five join together it will be $1.75, or 35 cents apiece.

If a club of 10 is formed it will be $2.50, or 25 cents apiece.

This makes a price so low as to defy competition.

There should be no trouble whatever in raising a club of 10 at every Postoffice in the United States.

Let every farmer who wants a first-class agricultural paper for the ensuing year at an almost nominal price, get nine of his neighbors to join him in a club, and send us $2.50 for 10 yearly subscriptions to THE AMERICAN FARMER.

There will be no deviation from these rates.

Send in your clubs at once, so as not to miss a number.

NEW PUBLICATIONS.

THE GRAPE CULTURIST. By Andrew S. Fuller. New Revised and Enlarged Edition. New York: Orange Judd Company, 1894. 12mo. Cloth, pp. 282. Illustrated. Price $1.50.

This book on grape culture has had a very large sale for many years, and has by common consent been given the palm for practical value and usefulness. The new edition has been found necessary because of the rapid strides which have been made in viticulture in the past few years. The present edition, materially enlarged, is decidedly up to date. All the discoveries pertaining to materials and methods of applying them for the purpose of resisting the various fungus diseases which have been so disastrous to grape culture, receive attention in this new edition. The list of standard grapes is carefully revised and a large list of the more recent, but as yet unestablished varieties, is given for consideration.

It is a complete vade mecum for anyone contemplating grape growing, and no vineyardist, no matter how long his experience, can afford to be without it. Chapters on growing from seed, on the various methods of wood propagation, layering, grafting, character of soils, which are best for vineyards, trellising, pruning, culture, etc., are complete and interesting.

BIGGLE BERRY BOOK. By Jacob Biggle. Published by Wilmer Atkinson Co., Philadelphia. Price 50 cents.

This is number two of the *Biggle Farm Library*, and contains not only the advice and experience of a practical berry grower, but of many leading berry experts of the country. Perhaps the most unique and attractive feature is the series of colored plates, containing over 60 berries true to size, shape and color.

Notes.

Demorest's for January has an interesting illustrated article on the Japanese Empress and her ladies by Frank Carpenter, several good stories, an account of the cacti and its curious growths, besides its regular portrait album of notable men and women and the fashion pages and talks about fads and fancies. Published by W. Jennings Demorest, New York. Price 20 cents.

Frank Leslie's Popular Monthly for January, just out, is really a holiday number, with regard both to the character of its reading matter and its richness in illustration. The leading article, "St. Andrews and Andrew Lang," by Mrs. Leicester Addis, is a charming account of the university career and literary life of this versatile author, also of the quaint little Scotch city of his Alma Mater, where the now faddish game of golf has been played on its native links ever since the Middle Ages. Frances Smith gives a glimpse of "Miss Gould at Lyndhurst," illustrating the occupations and amusements of an American chatelaine; and Frances Courtenay Baylor contributes three suggestive chapters "On Entertaining." In the way of picturesque travel and exploration, there are "America's Egypt" (Yucatan), by Mme. Le Plongeon, "Finland and the Finns," by Herman Montague Donner; and "A Dash into Pineapple Land," which is southeastern Florida. Lydia Hoyt Farmer contributes an interesting paper upon "Jerusalem in the First Century," and Charlotte McIlvain Moore writes sympathetically of "Old Kentucky Homes." "Chiming Bells," by S. H. Ferris, is a seasonable topic, throughly treated; and a full-page engraving of Boutigny's picture of the death of Marshal Lannes at the battle of Essling furnishes the motive for some interesting historical pages about Napoleon and Alexander I. of Russia.

The Road to Wealth Leads through the Southern States is a valuable little publication of facts relating to the opportunities for settlers in the States of the South. Every one considering a new location should have a copy, and read it, before deciding upon his future home. Published by E. C. Robertson & Co., Cincinnati, O. Price 25 cents.

Among the excellent articles in the *Overland Monthly* for December are "As Talked in the Sanctum," by the Editor; "The Vigilance Committee of '56," by Almarin B. Paul; "The Decline of the Mission Indian," by Scapland-Clark; "The Metamorphosis of Fencing," by Ansot, and "The Song of the Balboa Sea," by Joaquin Miller. All are handsomely illustrated. Published at San Francisco. Price 25 cents.

STRAWS.

Oregon's hop crop breaks all records.

Don't fail to save the best seeds for next year.

The Argentine crops are reported to be 25 per cent. short.

A drouth has one advantage: It is the best time to kill weeds.

An excellent quality of champagne is made from pears in Florida.

California has had the best season ever known for drying raisins.

The lemon crop of Florida of 1894 is estimated at 200,000 boxes.

The cigar-box industry has attained large proportions in Florida.

About 60,000 cocoanuts were shipped North from Florida during 1893.

Texas wheat averaged 14¼ bushels to the acre this year. Oats 13 bushels.

A humming bird a little larger than a house-fly is common in the East Indies.

The cotton crop in Florida this year is poorer than it has been for many years.

Germany has increased the duty on cotton-seed oil 250 per cent. over present rates.

A report estimates the lemon crop in Florida at 200,000 boxes, or more than four times the amount of last year.

The hop crop of Oregon, it is believed, will not exceed 30,000 bales, which is over 10,000 bales short of estimates.

Saw-Palmetto berries are being sent to manufacturing druggists in Northern cities from Florida in large quantities.

The profit in farming depends upon three factors: The value of the product, the cost of production, and the time consumed in producing.

One million dollars' worth of deciduous fruit—green—was shipped to New York from California this season, representing 1,100 carloads.

Tobacco is one of Oregon's latest experiments in crops, and excellent tobacco has been grown and cured in several districts of that State this season.

Of the 2,353 people in Switzerland over 80 years of age. 1,898 are engaged in agricultural pursuits. This does not include the horticulturists or florists.

When the crops of Switzerland are injured by hail or late frost, the Government, if found necessary, pays indemnity, thus enabling the farmers to bridge over bad seasons.

Professor Elihu Thompson says that an umbrella with brass chains hanging from the ends of the ribs makes a complete protection when held over the head during a thunder storm.

Celluloid may be made transparent, and a sheet of it coated with silver constitutes an admirable mirror. This substitute for a looking-glass cannot be easily broken, but it is, of course, very inflammable.

Planters on the lower Indian River, Florida, are experimenting in the growth of the sisal hemp plant with excellent prospects. The fiber obtained is almost pure white, fine as silk and as strong as any of the fiber of commerce.

The corn crop of Mexico, which early in July looked very unfavorable, has been much improved by the rains of the later part of July, and it is now stated by the railroad officials that probably more than half a crop will be harvested.

It is a remarkable fact in botany that no species of flower ever embraces, in the color of its petals, the whole range of the spectrum. Where there are yellows and reds there are no blues; when blue and red occur there are no yellows, and when we have blues and yellows there are no reds.

As to whether to turn the stubble under or burn it off each farmer must decide for himself, with reference to the nature of his soil. Burning stubble gets rid of weeds and insects; turning it under helps to make heavy, stiff soils lighter and more porous to air and water.

Gottlieb von Klackenberg, a South African Boer, has two racing ostriches. One of them has developed a speed of 22 miles an hour and has a stride of 14 feet. The breeding of ostriches for racing purposes has been seriously interfered with by the passage of an anti-betting law by the English Government.

The world's tunnels are estimated to number about 1,142, with a total length of 514 miles. There are about 1,000 railroad tunnels, 90 canal tunnels, 40 conduit tunnels and 12 subaqueous tunnels, having an aggregate length of about 350 miles, 70 miles, 85 miles, and nine miles respectively.

So great is the interest taken in the abandoned farms of Massachusetts that the State Board of Agriculture will endeavor, with the aid of $700 still remaining of the appropriation granted two years by the Legislature for the purpose of collecting information on this subject, to get out another catalog.

Russia has produced this year, according to the estimate of the Minister of Agriculture, 272,000,000 bushels of wheat, as compared with 336,000,000 last year. Her rye crop is 792,000,000 bushels, as against 752,000,000 a year ago. The barley yield is 176,000,000 and that of oats 672,000,000. There is no famine in the Czar's empire this year.

An example of the enormous decrease of the value of farm lands in England is afforded by a recent sale of 8,000 acres for $5 an acre. The same land was sold 30 years ago for $40 an acre. The land tax and the tithes which are collected for the support of the Church amount to 50 per cent. of the rent paid for the use of the land at the present time.

It is believed that Kansas has passed through the usual period in new enterprises of dishonesty, ignorance, incompetency, and visionary expectations in the sugar business, and at last brought it to a permanent, solid business basis. The mill at Medicine Lodge, which represents an investment of $125,000, has passed into the hands of a company of practical Englishmen, who are running it on strictly business principles, working up 200 tons of sugar sorghum cane per day, producing an average of 120 pounds of sugar per ton, or 12 tons daily.

The Beef Production.

The beef production of the West is incapable of indefinite extension. In the face of the growth in the consumption there will be a shortage in the production pretty soon; and farmers might as well prepare a little for that event, which cannot be far in the future. They cannot change their methods all at once when this demand appears and the demand for the over-stimulated dairy productions falls off, which will very likely be at the same time.

But we in town pay good prices for the beef we eat, says Wilbur Aldrich in *Country Gentleman*. It is so high now that I cannot afford all I want. If the farmers cannot sell their beef for a fair price, the fault is undoubtedly in themselves. If the other fellows combine against the farmers, why do not the farmers combine in their own behalf? If the farmers were in large enough concerns, they could sell their beef at good prices, even if they had to arrange to sell it at retail; and they could also more easily carry on a well balanced dairying business and well balanced farming generally.

A New Professor of Agriculture.

Eugene Davenport, M. S., has been elected Dean of the College of Agriculture and Agriculturist of the Experiment Station of the University of Illinois to fill the vacancies made by the resignation of Prof. Geo. E. Morrow, and is expected to begin work Jan. 1 next. Prof. Davenport is a native of Michigan, a graduate of, and for a time Professor of Agriculture in, the Agricultural College of that State.

He resigned his position there to go to Brazil to establish an Agricultural College. In consequence of war and financial depression in that country, the enterprise failed, and Professor Davenport returned after one year's absence. Previous to his holding these positions, and since his return to Michigan, he has been in charge of his farm in Barry County, giving prominent attention to dairying.

Floral Hints.

Zinnia plants are easily raised by sowing the seeds in a hot-bed or cold-frame early in Spring, and getting them well started as thrifty plants, ready for final planting out by the 1st of June, or as soon as the frosts are past. Seeds sown in an open garden bed early in May will also make good plants in time for setting. When raised in this manner means should be at hand to protect from frost if it is found necessary. There is great variety in the colors of the flowers, such as white, yellow, orange, scarlet, salmon, puple, and other shades.

Anemone coronaria should bloom soon after it makes its leaves in the Spring. Some which we planted last Fall and protected with leaves made a growth early in the Spring and bloomed freely. The plants inquired about may be allowed to go dry, and the tubers kept in the soil in the pots until ready to start into growth again about February.

A Conflicting Interest.

City Boarder—Don't you see that you could make this place a great deal healthier by draining that swamp across the road?

Farmer—So the boarders all say; en I'd dew et in er minit 'tweren't fer my son John.

City Boarder—Why does he object?

Farmer—Wal, yer see, he runs the drug store down tew ther village.—*Life.*

Valid Excuses.

Pennsylvania Farmer—Cousin Jim, your place looks as if you didn't take care of it.

Kansas Farmer—Gosh, Pete, I hain't got time to take care of it. It keeps me busy all the time log-rollin' bills for the benefit of the farmer through the darned Legislatur'.—*Philadelphia Press.*

Not Quick Enough.

Mamma—Robbie, why didn't you speak to Mrs. Bangle when you met her just now?

Robbie—You said I must always think twice before I speak, and I couldn't think of anything to think.—*Chicago Inter Ocean.*

She Did Not Mind.

Mrs. Nexdoor—Your little boy climbed over the fence and ran all over my flower-beds.

Mrs. Suburb—Horrors! They had just been watered, hadn't they?

"N—o."

"Oh, well, never mind; the exercise won't hurt him if he didn't get his feet wet."—*Street & Smith's Good News.*

PERSONAL.

E. T. Kellner, of Phœnix, A. T., has 1,000 acres of alfalfa, which nets him in clear cash, $20,000 a year.

TWO PAPERS AT LESS THAN THE PRICE OF ONE.

We have made arrangements by which we can offer THE AMERICAN FARMER and *The Breeder's Gazette* at a very low figure—that is, $1.50 a year for both. The subscription price of *The Breeder's Gazette* alone is $2 a year. This is a chance to get two good papers for very little money.

THE GARDEN.

Pluckings.

The pickle crop is reported short all over the world. Chicago has shipped 260 car loads of pickles to the East and to Europe, and pickles, before they grow again, will be marked among the scarce luxuries.

For the cabbage worm Persian insect powder extended by mixing one part of it with 20 parts of air-slaked lime and dusted into the head is a certain, harmless, and cheap remedy. Paris green may be used until the heads are beginning to form, but after that it is unsafe to use it on the roots of cabbages, turnips, etc.

When burying potatoes do not smother them in a pile, but dig a pit in dry, well-drained soil four feet deep; fill nearly full with the tubers, and put a roof over them upon supports, which should be covered with straw and soil, with chimneys inserted for ventilation. Remember, they should not be bruised in handling.

There is little difference in varieties of asparagus. Rich soil and good culture will make good shoots from any kind. The Palmetto is now the most popular sort. Seed sown in the Spring and well cared for in good soil will make good roots for setting next Fall, and the second year after setting there will be a fine crop.

This time of year in cold climates is the time to mulch the strawberry patch. The mulch will prevent the alternate freezing and thawing that usually takes place through parts of the Winter and early Spring. Leave it on the vines till danger from frost is past, then rake off and leave between the rows, where it will conserve moisture and fertility. Clean straw should always be used for this purpose. If it contains any kind of weed seed or grass seed, these will grow the following season, and this will make it very difficult to keep the patch clean the second year.

The most destructive insect attacking the potato, the Colorado beetle, needs no introduction or description, and the potato rot and blight is also familiar. The former is destroyed by Paris green, and the latter by the Bordeaux mixture. With the barrel pump the combined mixture, one pound to 200 gallons, may be applied very cheaply, and both pests kept under control. The first application should be made as soon as the larvæ of the potato beetle begins to appear. Subsequent applications should be made at intervals of from one to three weeks, according as the insects increase or as the weather may be favorable or unfavorable for the growth of the blight or rot.

Prof. Maynard, at the meeting of the Massachusetts Board of Agriculture, gave remedies for three enemies of the celery—the celery caterpillar, the celery leaf blight, and the celery rust. The celery caterpillar seldom does much injury, and is generally destroyed by hand picking. The rust and leaf blight are more common and destructive, coming on during hot, dry weather, and especially where the supply of plant food is small or reduced by the lack of moisture in the soil to dissolve it. The treatment of these diseases with the Bordeaux mixture has not been productive of quite satisfactory results, yet it is believed that if the plants are sprayed while in the seed bed, and then two or three times after they are planted in the field, much benefit will result. When either of these diseases appear, if deep cultivation near the plants by means of the plow or a deep-working cultivator is practical, and some quick-acting fertilizer is applied, the plants generally recover and grow to maturity without further injury.

Destroying Wild Onions.

The only practicable way to get rid of wild onions is by means of a systematic and short rotation and the use of smothering crops. Plow the land before any top sets are found, and sow field peas, two bushels per acre. Cut the peas for hay, and chop the land over with a cutaway harrow, and sow in August crimson clover at rate of 15 lbs. per acre, with a thin scattering of winter oats. Cut oats and clover together for hay, and put the land in corn, and follow with Winter oats and red clover. By the time this oat crop comes off, the onions will be about gone.—W. F. MASSEY.

Upland Rice in California.

A letter from Kern County, Cal., says that any land that will grow corn or grain will raise upland rice, and with no more expense for irrigation than corn or grain crops require.

By experiments made here in past years, it has been proved that from 50 to 60 bushels of upland rice per acre is an average product in Kern County. A bushel of rice weighs 80 pounds. One pound of hulled rice represents about three pounds of the product as first gathered. So when shelled rice sells for three cents a pound, one acre in this County will return a moneyed product of from $40 to $48. But a 48-pound mat of China rice costs here by the wholesale about $3, or a little over six cents a pound. The grade of upland rice raised here is worth nearly two cents a pound more than the China product. So at present prices upland rice in the hull here is worth two and two-thirds cents a pound, making a rate per acre of from $93 to $112.

To Get Their Money's Worth.

The largest distance a letter can be carried within the limits of the United States is from Key West, Fla., to Ounalaska, 6,271 miles, and all for two cents! People who would save money will at once start for Key West or Ounalaska and so address their correspondence that they shall get their full money's worth. —*Boston Transcript.*

Thayer's Berry Bulletin for January, 1895.

With the new year, resolutions should be made and plans formed for a berry garden in the Spring.

Every enterprising farmer, every owner of a village home should make this resolution.

Every ambitious boy or girl should be encouraged in fruit growing and have a little garden, with the profits thereof all their own.

Business men, professional men, or teachers, almost broken with care, may regain failing health, add years of pleasure to life and put money in their purses, by growing small fruits.

The demand for good fruit has never yet been supplied.

Many shrewd farmers realize this and are making more money from a few acres of berries than all the rest of the farm.

The greatest pleasure in fruit growing or farming, comes from an understanding of the simple natural laws that underlie and enter into all products of the soil.

The greatest success comes from the correct application of these principles.

Soils are good or poor according to the fertility they contain.

They are valuable, only, as that fertility is made available for plant food.

The application of this knowledge constitutes common-sense farming and brings success.

A fruit plant is a kind of machine, capable of doing much or little work; depending on food, moisture, care, training and environments.

The work consists in converting the refuse animal and vegetable matter into forms of health, the most wholesome and delicious known to man, into forms of beauty, filled with nectar, tinted with sunshine, ministering to all our senses and drawing us ever upward, ever nearer the soul of nature and the great Divine.

The first essential in growing berries is to subscribe for one, two or more, best farm or horticultural papers.

They are faithful messengers directing us to success.

In no other way can the principles of rural pursuits, the knowledge of how best to grow fruits, flowers, grains, grasses and domestic animels, be so easily obtained.

They give us best advice, most approved methods, the experience of successful men and the important events of this busy world.

Verily a good newspaper is worth more to the average farmer, than the best horse on the farm.—M. A. THAYER, Sparta, Wis.

Farming in New Mexico.

Apiculture in New Mexico is beginning to assume considerable proportions under conditions similar to those which have long made that branch of husbandry a profitable industry in California. The field particularly is in Eddy County, in the southeastern corner of the Territory, where there are several successful bee ranches. One farmer, with 150 hives, supplies the town of Eddy with honey, and he expects to ship $1,000 worth of comb honey to Eastern markets next year. It is an Arcadian industry, traditionally associated with the culture of the vine, and should prove exceedingly profitable in that region of grain and alfalfa fields, vineyards, and exuberant wild flowers.

Tobacco Quids.

A recent cablegram from Berlin announces that the new tobacco taxation bill fixes the duty on foreign tobacco at 40 marks ($9.60) per 100 kilos (220 pounds)—a tax of something over four cents a pound.

Tobacco culture in Louisiana has advanced far beyond the experimental stage. The Baton Rouge, La., *Advocate* predicts for it the fourth position in the staple crop of the State. Sugar, of course, is the greatest; then in turn some cotton, rice, and—in the near future, tobacco.

Tobacco growing having proved more profitable than cotton, numbers of New Braunfels Tex. farmers are now engaging in the industry. Efforts are being made to form a Tobacco Growers' Association.

About Wheat.

The Cincinnati Price Current says: "Special returns on wheat feeding to animals indicate that 40,000,000 bushels have already been consumed and 60,000,000 bushels to 75,000,000 bushels are likely to be fed from the present crop. The larger quantity implies approximately 110,000,000 bushels as the year's exportable total, including supplies from last year, half of which is already exported. Interior millers are having difficulty in securing home supplies and are looking to the centers."

Farm Land Rents in Iowa.

Farm lands for rent are very scarce and prices high. Rents vary from two-fifths to one-half of the crop, or from $3 to $5 per acre.—*Satix (Woodbury County, Iowa,) Chief.*

How a Plant has Traveled.

Less than 125 years ago the little plant known to the botanists as Lepachy's Columnaris was only known to inhabit a small section of country in the very southern portion of Louisiana. Some time later it was reported as occurring sparingly along the Canadian River; and, later still, on the Arkansas. Since that time it has slowly spread north, west and east, even to the very source of the Missouri, over into the British possessions, and is now said to be creeping along the Saskatchewan towards Hudson Bay. How a plant which originated in a warm climate could accustom itself to such changes is another of nature's mysteries.—*St. Louis Republic.*

COMMISSION SHARPS.

A New Jersey Farmer Sends a Timely Warning Against Them.

EDITOR AMERICAN FARMER: Being an old subscriber of your valuable paper, and knowing your devotion to your constituents' interests, I wish to call the attention to, and warn my fellow-farmers against, a class of people who, as I have found to my own sorrow, are getting to be very numerous in this country, and are calculated to do a great deal of injury. I refer to a class of sharpers who do business under the guise of commission merchants, and some of them do undoubtedly a large business and spend lots of money in advertising, sending out very business looking and seductive market reports, stencils for marking barrels, etc. They will even invite you to look them up in Bradstreet's and Dunn & Co.'s mercantile reports, refer you to the National bank where they probably have a good stiff balance to their account; and well they may have, for woe unto the poor dupe from whom they get any considerable consignment, as it will all go to swell that same bank account, and he will be lucky if they don't send him a bill for the freight.

Their scheme seems to be to get the names of farmers in far-off rural districts who are likely to have some products to dispose of—no matter what; they then ply them daily with booming market reports, stencils, etc., assuring them that all they have to do is to ship their goods to them to secure the prices they are continually publishing, and if the market happens to be a little slow in that locality, they are pretty sure to get some consignments. They will not let up until they do. I would like to give your readers a little experience of my own, and I have no doubt there are others in the same boat. About the last of September, I received a typewritten letter from a Chicago concern, stating that they had been given my name as a person who had sweet potatoes to dispose of, and soliciting consignments. This was accompanied by a very elaborate report of their own business, quoting sweet potatoes at from $2.75 to $3.00 per barrel, cranberries from $3.00 to $4.00 per crate, (the price here was sweet potatoes $1.50, cranberries $2.00, room enough for a nice margin, certainly.)

This continued two or three times a week, sending me stencils, market reports of their business, even telegraphing me, urging immediate shipments, and referring me to Bradstreet's and R. G. Dunn & Co.'s mercantile reports, the President of a National bank, etc., until finally I was convinced that the best thing to do was to try them a shipment. Accordingly I sent them 20 barrels (60 bushels) of sweet potatoes and six crates of cranberries, the whole worth at current prices here at home over $50. They continued sending letters and booming market reports, all urging further shipments, for nearly a month, when I wrote them stating that I wanted returns for the stuff already sent, before sending more, when I received the following report:

6 boxes cranberries at $1.50	$9 00
18 barrels sweet potatoes at 50c	9 00
	$18 00
Two lost in repacking.	
Charges:	
Freight	$15 38
Cartage	1 30
Commission	1 32
Total	$18 00

This was accompanied by a note advising me not to ship anything but first-class stock in the future. This arrived just in time to save my next neighbor from shipping his whole crop, which he had determined to do the following week, he and others in these parts having received about the same attention from them as myself. I wish to say further that the stock I sent them was as fine as is raised in Jersey, which I can prove. And now, Mr. Editor, I fear I have trespassed too long on the columns of your valuable paper, but if this should succeed in helping some of my fellow-farmers in saving some of their hard-earned dollars my object will be accomplished.—L. G. MITCHELL, Barnegat, Ocean Co., N. J.

Covering Wheat with Straw.

Any kind of covering that will protect the young wheat from the weather, and that will collect the snow on the land and keep it there, will be beneficial. It is the recurring freezing and thawing of the ground by which the roots are gradually drawn completely out of the soil, and left on the surface, that injures the wheat, and not the cold itself, unless this is unusually severe. The snow, being porous and translucent to the light, is the best of all kinds of protection, and, as the straw thinly spread over the ground holds this from drifting away, it is very useful. It does not afford any food for the crop, but it does a service to it still more useful, for the wheat at this time is not in a condition to make use of any food, as it is not growing.

ANTI-OLEO LAW SUSTAINED.

Massachusetts Act Held Not to Contravene Rights of Interstate Commerce.

Monday, Dec. 10.—The Supreme Court of the United States affirmed the validity and constitutionality of the law passed by the State of Massachusetts prohibiting the manufacture or sale in its territory of oleomargarine, colored so as to resemble butter, pure cream, or milk. The case came up on appeal by Benjamin Plumley from the judgment of the Supreme Court of the State in refusing to release him on a writ of habeas corpus from a term of imprisonment imposed by the municipal court of Boston for alleged violation of the statute.

The opinion of the court was read by Mr. Justice Harlan. It was a lengthy exposition of the law as related to the questions raised in the case, the principal one of which, he said, was whether or not the statute was in violation of the constitutional right of Congress to regulate commerce between the States. The justice announced that in the opinion of the court the statute was not such a violation; that Congress, by the act of 1886, did not intend to interfere with the exercise of any authority or power that the State might lawfully use or impose in regulating the sale of articles within their borders; that no one could or did acquire by that act a right or power to commit fraud upon society. The judgment of the Massachusetts court, in refusing to discharge Plumley, was therefore affirmed.

Mr. Chief Justice Fuller, for himself and Justices Field and Brewer, read a vigorous dissent from the opinion of the court. He said that irrespective of the terms in which a statute is couched, its force must be judged by the natural effect of its provisions. In this case, said the Chief Justice, the effect of the statute is to prevent the sale of oleomargarine, because, whether in its natural state or colored, it looks like butter. He denied the power of any State to prevent the sale of any article of commerce not vicious in itself, because its appearance might tend to deceive a purchaser.

The record in this case, he said, shows oleomargarine to be a meritorious article, free from any deleterious substance, and to prohibit its sale is in violation of the freedom of commerce between States. Vacillating decisions on such grave questions, the Chief Justice said in conclusion, were greatly to be deplored, and those who believed with him looked upon the decision in this case as a wide departure from well-established principles.

Russian Thistles.

No attempt is likely to be made to secure any Russian thistle legislation at this session until the Legislatures of the several infested Northwestern States have been heard from. Senator Roach and Congressmen Pickler and Johnson, of North Dakota, have given the matter attention, and say they are ready to act when they know what the people want. Senator Roach proposes that the Governors or the Legislatures of Minnesota, North and South Dakota, Nebraska and Iowa appoint commissioners to confer upon the subject and agree upon some common line of action. Congressman Pickler has had a bill already introduced which looks to the Government co-operating with the States in some joint line of action. It is the general opinion among Northwestern members that it will require State legislation to convince Congress that it should aid in the work of exterminating Russian thistle.

To Restore the Duty on Cattle.

Mr. Broderick, of Kansas, has introduced a bill in the House for the restoration of the McKinley tariff specific duty of $10 per head on cattle over a year old. The present advalorem duty, equivalent to about $2 per head, is insufficient to prevent the importation of Mexican cattle purchased in that country for from $2 to $4 per head. It is also alleged as a reason for the restoration of a prohibitory duty that Mexican cattle are diseased.

To Preserve Dairy Data.

Representative Hatch, of Missouri, has offered in the House a joint resolution authorizing an appropriation for publishing the tests of dairy products made by the Columbian Exposition. The resolution states that these tests were most searching and extensive in character, costing over $100,000, and that unless the records and discussions on the subject are now secured and published this large quantity of valuable data will be utterly lost.

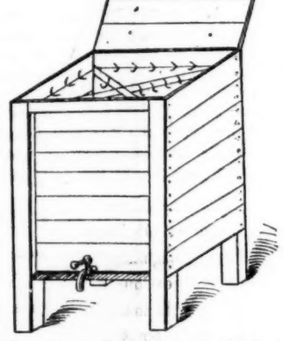
Roundabout the National Capital.

Over 60,000 plants were distributed in a recent year by the Department of Agriculture at Washington, one-half of which were strawberries and one-fourth grapevines. Only the economic or food-yielding plants are distributed.

A Sirup Strainer.

EDITOR AMERICAN FARMER: I take the liberty of sending you an illustration of a very successful maple sirup strainer that I have made for myself:

First, there is a tin tank, with a wooden jacket; the sides of the jacket are



higher than the tank and fitted with hooks just at the top of the tank. Two cross pieces run from corner to corner, also fitted with hooks, which leaves four places to hang strainers, which should be of cotton flannel.

When the hot sirup is turned in, and the cover shot down, the wooden jacket will retain the heat until the sirup all runs through, even should it take 10 hours or more. A faucet in bottom of tank, and extending through jacket, draws off sirup for storage.—FISHER AMES, Lakeside, Mich.

Sugar Lumps.

Peter Heesch, of Hall County, Neb., raised 36 tons of sugar beets on an acre and a half. At $5 per ton this is $180, or $120 per acre. The largest beet weighed 13 pounds.

The Field.

Save every stalk of fodder. It will be a long time before grass comes, and corn is high.

LOW PRICES OF FARM PRODUCTS.

Agricultural Department Statistics Show a Declince Throughout the List.

The returns to the Statistical Division of the Department of Agriculture for the month of December relate principally to the average farm price of the various agricultural products on the 1st day of the month. By farm prices is meant the price of product on the farm or in the nearest local town or railway market. In comparisons of these prices with commercial quotations allowance must be made for cost of handling, transportation, profits of dealers, etc.

The farm price of corn averages 45.6 cents per bushel, which is 9.1 cents higher than the corresponding price of last year, which was 36.5 cents per bushel. This price is 6.3 cents per bushel higher than the average price for the decade 1880 to 1889, and is just 4 cents higher than the average for the four years 1890 to 1893.

The average price of wheat is 49.8 cents per bushel, the lowest price in the past 25 years. This price is 32.9 cents less than the average for the 10 years 1880 to 1889, and is 22.1 cents less than the average for the four years 1890 to 1893.

The returns make the general price per bushel of rye 50.5 cents, which is 1.3 cents lower than the price at the same date last year.

The average farm price of oats as returned for December 1, this year, is 4.1 cents higher than for the corresponding date last year, being 32.9 cents per bushel, against 28.8 December 1, 1893.

The average farm price of barley is 44.3 cents per bushel, against 40.6 cents for the year 1893, or a gain of 3.7 cents. The price for 1892 was 47.2.

The average price of buckwheat is 56.2 cents per bushel, against 59 cents for the year 1893, or a decline of 2.8 cents.

The returns show the average price of hay to be $8.35 per ton, while that of last year on the farms was $9.18. The average price for 1892 was $8.49.

The average price of tobacco is returned at 6.7 cents per pound, against 7.8 cents last year, a difference of 1.1 cents. The average farm price in Kentucky, which is the State of the largest production, is 5.5 cents per pound, or 1.2 cents below the average for the country.

The selling price of potatoes on the farm on December 1, is reported at an average of 55.5 cents per bushel, or 4.5 cents less than at the same date last year.

The average plantation price of cotton, as shown by the Department reports, on December 1, was 4.9 cents per pound against 6.99 cents for the same date last year, and 8.4 cents in the year 1892, a decline from the prices of these years respectively of 2.09 and 3.5 cents per pound. The lowness of this price is without precedent.

The condition of Winter wheat on December 1, averaged 89, against 91.5 in the year 1893, and 87.4 in the year 1892. In the principal Winter States the percentages are as follows: Ohio, 93; Michigan, 92; Indiana, 86; Illinois, 91; Missouri, 92; Kansas, 73; Nebraska, 76, and California, 92. The returns of correspondents of the Department make the acreage of Winter wheat sown last Fall 10.3 per cent. of the final estimate of the area harvested in 1894, which was 23,518,796 acres, a figure larger than the preliminary estimate given out in June last, which upon further investigation was found to be too low. This preliminary estimate, therefore, makes the area sown for the harvest of 1895 24,224,000 acres.

The Best Republican Newspaper.

The New York Tribune makes a brave showing for the Republicans and continues to advocate their policies with its historic ability and energy of purpose. Any Democrat who wants to know what the Republicans think and intend, and wishes to obtain the information from a paper whose utterances are authoritative, can get Republican doctrine, pure, undefiled and fresh from the fire, in the columns of *The New York Tribune*. The prospectus of that Republican organ can be found in another part of this issue of our paper. As an agricultural weekly, *The Tribune* is an excellent paper. Its market reports are especially accurate, complete and good, and they commend it to all who want current prices and the state of trade. There are reasons why every family wishes (in addition to the necessary local newspaper, which it must certainly have, whether it takes others or not) to enjoy the perusal of the great editorials, foreign letters, book reviews, and special articles of a newspaper which is edited for the country at large, and devotes its attention to matters of national and general moment. In their choice of general newspapers, this Winter, our readers will do well to consider *The New York Tribune*. Its price is low, $1 a year, and its columns are crammed with strong, brilliant and entertaining matter. It is announced that the paper will continue to print the writings of Roswell G. Horr, of Michigan, on the Tariff, Reciprocity, Coinage and the Currency, and *The Tribune* has a strong editorial page and many non-political features of interest, including two pages a week of Agriculture and papers on special branches of Farming. *The Tribune* has undertaken to illustrate the news of the day and has an excellent Art Department. An illustrated Premium List and a samble copy will be sent, free, to any applicant.

Sugar.

Utah farmers think that beet sugar is to be the leading product of their State. The Lehi *Banner* says: "It will increase the valuation of real estate in a phenomnal manner within one or two miles of the factory. It will make the 20 acre farm, which to-day is only worth $1,000, in a very few years worth three or four times that amount. Where such a farm has only supported a family of five persons, it will, under that industry, be able to support 10 to 15 persons better."

In Austria the experiment of sub-soil plowing by steam has rendered excellent service. The yield to the acre has been shown to be superior to that obtained by ordinary plowing. At first the beets on deep-plowed fields do not seem to develop, but later in season regain lost time.

Belgium is trying the experiment of raising her own sugar, with good results. The Belgian farmers were well satisfied with the result of their efforts in beet cultivation. On some farms the returns were $120 per acre.

The London *Standard* says that the Government of Trinidad has passed an ordinance for the extermination of parasol ants. These ants strip trees of their leaves, and carry them to their nests in about 24 hours' time.

MONTANA.

Things Flourishing in the Bitter Root Valley.

EDITOR AMERICAN FARMER: Since our last letter to you we have received quite a number of inquiries as to Montana and her resources. If you will allow us space in your excellent paper we will try to give a few of her various means.

We will not speak of our large stock ranges, as they are too well known to need mention. So we will just speak of our little valley of the Bitter Root. As we have made mention heretofore of her grain, hay, fruit and vegetables, we will say that what we now want is manufacturers to handle our produce at home instead of paying freight both ways, so as to get the manufactured articles.

First, we need another mill; as we only have two small ones now, we ship wheat out and flour in. A mill to handle both wheat and oats is what is needed at Stevensville. Also, sugar beets have been experimented with enough to insure the success of a sugar refinery. A starch factory would pay a handsome profit on the investment, as will be plain when one thinks of the potatoes that we ship. Then, we need a cannery to use up our fruit instead of shipping; also, for vegetables.

Here also is a good opening for stores of all kinds, except drug. Merchants who will be satisfied with good profits would do well. Also, a first-class blacksmith and wood workman could not find a better location. Carpenters we have plenty.

We have no room to complain as to crops generally. All kinds of grain and hay were splendid.

Vegetables, did you say?

Why, friends, we can almost feed the world on vegetables.

Just think of 30 carloads of potatoes from our little station in one day, and that is not the end of it yet. Our merchants kept right on filling orders, and there are thousands of tons being stored for the Spring trade. No one need think this an exaggeration, as every word is true, and, if need be, can be vouched for.

We will now try to give some idea of the amount of produce shipped from our little station.

Last year we shipped 600 car loads. So far this year about 150 cars have been shipped, and still they go from five to 10 cars per day on an average.

Our merchants say they will beat last year's record, while large quantities are being fed.

"But rates are high and prices low,
There's not much left to them that sow."

Where are our friends with their hobby-horse free trade and low prices? I think we have them like a jug handle—all on one side, or a run-down shoe.

Notwithstanding our two leading industries are paralyzed (to wit, silver and wool), we do think we are as well off as any of our friends in other localities.

There are more hogs fed than heretofore, which bring ready cash, if not a great deal. They help pay taxes and other luxuries.

We had quite a lively time this Fall at election. Besides State and County officers, we had a State Capital to select; also a County-seat in our County. The voters did not seem to want to move either one. Such things come too high these hard times, I suppose.

Our Fall was fine until a short time since, when we have had a few cold days and a little of the beautiful.

It has been fine for Winter grain, of which there was quite an area planted last Fall.

In our last to you there was a slight mistake, which made our mountains quite small. They are 12,000 feet instead of 1,200, quite a reduction. My friends say that I had best not show up until it is corrected. So as it is getting very cold to lie out in the hills, hope you will correct it.

Some Montanians over on the east side keep watch for fear our neighbors down in Dakota will try to carry such small mole hills as those we spoke of off some night.

We have another bad case of patriotism in our midst, whereby the people's land is donated to the State for so-called school fund, but in reality another small steal from the poor for the benefit of the rich.

But, then, what rights have the poor man, or by what does he live? Is not this world made for the wealthy?

We have no fault to find with your paper, only it is too small. We would freely give double the subscription to have it enlarged, and in magazine form. What say others of your large family of readers?—J. W. G., Stevensville, Mont.

HOMES IN TEXAS.

Another Letter From Our Galveston Correspondent.

EDITOR AMERICAN FARMER: In your last issue you so kindly published my other letter about "A Chance for Homes," I thought, perhaps, you would do some of your readers another kindness by telling through your valuable paper that I am getting out a printed letter, which answers nearly all their questions which have been asked in the over 200 letters your article has brought. Many express a surprise that such desirable lands lying so near Galveston and Houston, each with a population of over 40,000 people, should have remained so long in such a wild state. There has been no railroad or other means of reaching these markets, but one is now being rapidly built, and in less than five years this land, which may be secured now at from $2 to $6 or $8, will be worth from $10 to $50. I am justified in this prediction by conditions which want of space prevents me from giving here, but I will gladly send a copy of a letter I am having printed to send in answer to former inquirers. This printed letter answers nearly every question that has been asked me, and is about all any prospective emigrant would desire to know. There are thousands of farmers in the cold Northern country who, if they realized the opportunity open in this coast country to secure such cheap homes, in a climate like unto California, would not rest until they had secured a home in this bright Summerland, where health and wealth go hand in hand with honest industry; where flowers and fruits of almost every clime flourish in all their glory.

As I stated in my former article, I am interested only so far as that I have secured a piece of land near southeast corner of Chambers County, and I am anxious to see the country settled up with an industrious class from the northern part of the United States. I know that parties are telling of this land to Europeans, and I think it a shame that such good opportunities in this the land of our birthright should be given first to foreigners. As yet, those arriving are American citizens, and there is no good reason why this rare chance should not be embraced by a sufficient number of Americans who want homes in a warmer climate than they now live in.

I am sure, Mr. Editor, if you will give this letter the publicity your paper can give, you will confer a boon upon many who will inquire and finally move into this delightful land, where the thermometer never registers above 88 or below 11 degrees above zero.—M. O. PERKINS, Dentist, Galveston, Texas.

To the New Year.

Was it forth from the flakes of drifting snow,
As they ceaselessly hurry to and fro,
Thou camest to-day, O white New Year?
Or out from the golden gates of Dawn
When an angel opened them wide, at morn,
Didst thou come this way, O bright New Year?

Was it forth from the realms of an unknown land,
Sent thither by touch of an unseen hand,
Thou camest to-day, O blest New Year?
Or out from the shades of the saddened past,
Where the Old Year cares are hid at last,
Hast thou come this way, O best New Year?

Was it down from the heaven that spreads above
And forth from the land of Eternal Love
Thou camest to-day, O benign New Year?
Is it into this world so stained by sin,
With thy spotless robe thou hast entered in,
And come to stay, O divine New Year?

—*Kathleen R. Wheeler, in Lippincott's.*

ABOUT WOMEN.

IN A RECENT DISCUSSION as to the oldest living novelist, it was decided that Mrs. Harriet Beecher Stowe holds the position.

* * *

MISS FRANCES E. WILLARD says that good cooking is essential to human happiness, while bad cooking has driven thousands of men to drink.

* * *

A KENTUCKY GIRL, MISS TOMkins, who was purchasing clerk of the U. S. Supreme Court, now holds a position never before filled by a woman, which is Assistant Marshal of the court.

* * *

MRS. AMELIA BLOOMER, WHO has been living at Council Bluffs for 40 years, is not the inventor of the costume named after her. In 1851 she advocated the costume and wore it, but history says she obtained the pattern from another woman.

* * *

MISS MATTIE GARMAN, living at Kaneville, Ill., who has been a cripple all her life, is receiving letters by the wagon-load, daily, containing cancelled postage stamps, a collection of which she is making in order that she may receive medical aid, an institution having offered to treat Miss Garman if she would collect 1,000,000 stamps for them.

* * *

THE SWEET, LITTLE WOMAN of Japan is as different from us as possible. Her life-lesson is obedience, yet she never loses her temper, never uses a coarse or irritating word, and is always piquant and gracious and smiling, though she will die for her husband or her children. Her hair is dressed to look like a big black butterfly, and is never taken down except by the barber who rearranges it about twice a week.

IT IS EVERYWHERE.

The Sphere of Woman—The New Woman is not New.

"You talk about a woman's sphere
As if it had a limit,
There's not a place in earth or heaven,
There's not a task to mankind given,
There's not a whisper, yes or no,
There's not a blessing or a woe,
There's not a life, or death, or birth
That has a featherweight of worth,
Without a woman in it."

It is becoming a little tiresome—this incessant talk about "woman's sphere" and the "new woman." Any sphere that a woman is able to fill is her sphere. The above lines express the idea perfectly. As for the "new woman," there is no new woman. Go back as far as you please in history and you will find her. Was she not last at the Cross and first at the Tomb? And even before that wondrous and awful time, was not Cesar's wife better than Cesar? In Rome at the beginning of Christianity, Hypatia, a young and beautiful maiden, conducted a school of philosophy and lectured to audiences of men. In the middle ages, Joan of Arc, through her very womanhood and spirituality, was given strength to win for France the first battle over the English which they had gained for years. Throughout Shakspere's plays woman's excellence is dominant; it was no new theme in that immortal poet's time. In almost every play, tragedy is averted by the strength and endurance of the heroine, or, where there is failure, the cause is due to the ill judgment and lack of fixedness and stability of the man.

The sagacity of Queen Elizabeth outdid that of any of her famous courtiers, and she was as keen witted and clever a lawyer as England then possessed. The women of the Empire who were famed for their brilliancy were quite equal in number to the men; and in our own days of the Revolution there were probably many obscure Mollie Starks of whom the world has never heard.

All of this was in the days when woman had no time to shine, because of the drudgery in her home and everywhere. Now, when she has found the time, it doesn't take her long to show what she can do, and she could probably have done as much long ago, being given equal opportunities.

She may, even to-day, be afraid in the dark, or afraid of mice, and she may like new bonnets, but when she has to, she isn't afraid to face suffering, sorrow and the saddest scenes which life holds for her; and she does not mind wearing an old bonnet 15 years when the money in the family purse is needed for other things.

Hair Brushes.

For cleaning hair-brushes, simply shake the brushes up and down in a mixture of one teaspoonful of ammonia to one pint of hot water; when they are cleaned, rinse them in cold water and stand them in the wind or in a hot place to dry.

FASHION'S FANCIES.

Box Plaits Again.

The wool gown in the cut has the waist box-plaited in both front and back. The effect is somewhat similar to the old Norfolk jacket worn some 10 years back. It is a neat and stylish way to make up

a plain dress. The fastenings are hooks set on under a plait in front, and the collar is made to lap and hook on the side.

For a Very Little Maid.

Nothing is more winsome than a little maid in a gretchen cap and a wooly gray coat trimmed with fuzzy gray fur. Look at her picture and judge for yourself. The cap is of plain gray cloth

with a white ruching or a narrow little lace edge about the face and a tall bow on top, of light blue. The lining is thin silk. The coat is warmly lined and has big double caps on the sleeves which add to the warmth. The buttons are white pearl. The coat is cut by a straight sacque pattern.

Written for the Farmhouse.

The Old-Fashioned Flower Garden.

The dear old garden, the pleasant garden
Where as a child we frolicked about,
Weeding and hoeing and sparingly culling,
And watching each bud as it laughed out.
Hollyhocks here, and princess feather,
Larkspur and primrose, and lilies white.
Sweet was the old-fashioned garden
Where we kissed mother good-night.

The glory of the-old time home was its flower garden and dooryard shrubs. There were lilacs, waxdrops, snowballs, honeysuckles, rose of sharon, and syringia, as well as huge clumps of damask and double red roses, the sweetest and hardiest roses ever grown, but, alas, they have become very scarce, as they have been superseded by more modern varieties. The walk from the house to the road were clumps of peonies, sweet-williams, clove pinks, wallflowers, rockets, and lilies. These were mother's especial flowers, and who that has reached the meridian of life does not remember of picking a handful of these sweet pinks just for their fragrance, when a child on their way to school.

In the old-time flower garden many medicinal plants as well as flowers were found; such as hoarhound, wormwood, saffron, cumfrey, coriander, caraway, sage, and pennyroyal; while in the flower beds were grown bachelor-buttons, four-o'-clocks, ragged ladies, wallflowers, and johnny-jump-ups, besides many other varieties too numerous to mention.

How many of our readers can look back to the time when the culture of house plants was in its infancy; when a window with house plants was as scarce to be seen as a window at the present day without them. These generally consisted of a few stunted geraniums which seldom blossomed, and a monthly rose and pink which were supposed to blossom every month, but did not, a box of artemisia and a Jerusalem cherry tree. But thanks to our enterprising florists and their wide-spread literature and cheap plants, who have made it possible for the poor as well as the wealthy to enjoy the luxury of flowers.

While I love all flowers, from old associations I love the old-fashioned ones the best, and cultivate a small bed of them each year. Last Spring I received a packet of seed from a florist, said to contain 1,000 different varieties of flowers. I sowed one-half of the packet only, from which I had more varieties than I cared to count; while all of them were lovely, many of them were entire strangers to me. My small flower garden attracted much attention, and may be said to have been an open book on botany the entire Summer and Autumn. Ladies who were proficient in the science of flowers failed to find names for many of them, or to classify them. These flowers gave me more pleasure than all the others, as each day I would find some lovely blossom that was entirely new to me. Some of these flowers were still in blossom when our first snowstorm arrived, and were ruthlessly cut down in a single day. In the home from which I write there may still be found the most of the above named varieties, many of which were planted over 50 years ago, and are still thrifty and vigorous.—A. C. BUCK, Meridian, N. Y.

Pretty and Useful.

EDITOR FARMHOUSE: We have taken THE AMERICAN FARMER some time, and I am very much interested in your page. I want to tell you of a pretty pincushion I made. Take a well-polished cow's horn and cut off the point, so that after gluing a piece of silk or satin to the inside, at the point, you have still room for your thimble. Then make a small pin and needle cushion to fit the large end and glue in place, hang up by narrow ribbons glued to each end, and you have something that is neat, pretty, and useful.—MYRTLE HUGHES.

WOMAN'S WISDOM.

Boys' Clothing.

In one respect, and perhaps only one, the little boy has room to complain that he is less favored than his sisters. For, while articles are written by the score on girls' clothing, very little is ever said of the boys. A friend of mine, who is the mother of three boys, has been making some new suits, and I will describe a few, that I saw while visiting her recently.

The baby boy, who is three years old, has for a best suit a kilt skirt, which is sewed to a low-necked, sleeveless waist; over this is a little jacket extending about four inches below the waist and slashed up to form two square tabs in the back. In the front are loose jacket fronts, over a pointed vest, that buttons to the neck, and is finished with a plain turnover collar. The material is brown cloth, and the skirt and jacket are trimmed with brown and yellow braid.

For the second dress, she used an old light-gray flannel dress of her own, which had been ripped apart and dyed navy blue with diamond dye. This is made in one piece from the neck to the hem, having three box-pleats both back and front, extending from the neck to the waist. A broad belt holds it in place, and it is buttoned in front. The sleeves have full upper portions, gathered into cuffs about four inches wide. The neck is finished with a sailor collar.

Another suit for this little man has a dark-green woolen skirt, and a blouse waist made of outing flannel. Over this is worn a plain round jacket of the green.

For everyday wear there are little dresses of blue and red print, made long waisted and buttoned in front. These are very plain, so they can be washed and ironed easily. There are also the usual number of checked gingham aprons to keep him neat and clean.

Suits for older boys may also be made at home, but care must be taken to have them fit perfectly, and every seam must be neatly pressed; if this is not done, they will have a "home-made" look. The materials most liked are plain cloth, dark stripes, and invisible plaid.

Partly-worn suits, cast aside by the older members of the family, may be made over for the little boys, and by careful cutting the worn portions can be discarded. Sometimes all that is necessary is to thoroughly brush the goods, then sponge and press carefully, but if they are faded it is always better to dye them the desired color with diamond dye. The little ones will like them much better than if they were left the same color they were when some one else wore them. Then, having secured a pattern of the proper size, cut each piece carefully. Baste the seams of the coat, try it on, and make the necessary alterations. Then stitch the seams on the sewing machine and press them. Make the lining and put the coat together. In making the pants, the outside seams should be sewed, the pockets put in, and the fly put on, before the inside seams are sewed. A little practice will enable anyone to do very satisfactory work.—E. J. REDDING.

HINTS FOR THE HOME ECONOMIST.

Playthings, Baked Pears, Comforts, and Other Things.

EDITOR FARMHOUSE: I am so glad to see so many ladies enrolled in the Household Department of THE AMERICAN FARMER. And to the mothers who have young children I would like to ask if you are not annoyed many times with their playthings, scattered over the floor, when you sweep? You can do away with this trouble and teach them order at the same time by procuring a large dry-goods box (mine is a box that coffee came in), put castors on it and a couple of hinges on the cover, also pad it, then cover with cretonne and paper the inside. The children will be delighted, as they can pull the box from room to room, and they will soon learn that this box belongs to them, and their playthings must be put in it, or they will get stepped on and broken.

This is Dec. 2, and, if it is Winter, we have just had for dinner delicious baked pears, and as it is my own invention and not patented, I will share it with you all.

Two years ago, when pears were so very plentiful, I took some and wiped them clean, but did not pare them, the stems were left on and all the core taken out. Take your largest dripping pan, put it just as full of pears as it will hold, take good brown sugar, (the kind that tastes like maple sugar is best,) make them real sweet, filling the core generously, then fill the pan full of water. Set in the oven and bake them until tender. Then take your fruit cans and fill full as possible with pears, then add the sirup and seal. If the cans are perfect, these pears will keep, and be like fresh-baked ones by putting them in the dripping pan and warming them up again. In some cans I used granulated sugar, and in some of them I sprinkled a little cinnamon. They are good, healthy and digestible, and look tempting too.

Now, as I have just made such a pretty, warm comfortable out of the bright, pretty bits of cashmere, silks and velvets, I see so many are exchanging with each other, I will tell how I made mine, although I did not exchange with anyone; I had plenty.

I took heavy, unbleached muslin, sewed two breadths together, larger than my bed, then laid it on the floor, and each corner I filled in with gray cashmere. At the sides, top and bottom, I cut a square, then cut that in two again, and put in the middle of the sides, top and bottom points in the center. In the center is a large gray square. On these large gray pieces I painted sprays of flowers, and then filled in around them with bits of silk velvets and serge. I hemmed mine all down, and it is very warm and comfortable.

I am now about to begin a slumber comfort for the sitting-room lounge, with pillow to match, but will make it a little different, as I shall buy a pair of heavy cotton-flannel blankets, costing 60 cents, cut them in two and put the pieces directly on the lining. This will save buying a lining. I forgot to tell you, the first one I lined with double-faced gray canton flannel. I always used to give these pieces away to an old lady in the neighborhood, but this year I concluded to utilize them myself, and am pleased with the result. I hardly know when I made them.—MRS. FRED GRAHAM.

HER BOOKS.

Well Chosen and Well Considered.

EDITOR FARMHOUSE: The "Journal of Marie Bashkirtseff," in a pretty blue-and-gold dress, occupies a place in my bookcase. This is the life of a talented young Russian artist, written by herself, and published at her request, after her death.

One commences with disapproval of many of the sentiments of the child, but ends with only sincerest pity for the woman. I little thought when I read this book several years ago, that I should ever have the pleasure of seeing any of the pictures which she writes so much about. But last Summer, in the Woman's Building at Chicago, I saw one of her pictures and looked at it a long time. It was a street scene, with two little ragged newsboys passing along, one carrying an umbrella under his arm. The faces were lifelike, a thing one doesn't always see in oil portraits.

"John Halifax" is one of the books I could never get up any enthusiasm about, although I have read it twice.

Taylor's "Views Afoot" is a glimpse of foreign countries. It is good, but he cannot equal Hawthorne in his "Note Books," as a pen artist.

Dickens, 10 volumes of him, I count among my possessions. When he is serious, I like him very much, and think few authors can equal him. But when he tries to be funny and portrays grotesque characters, using 100 words where 10 would do, he grows extremely tiresome. My favorites are "Little Dorrit," "David Copperfield," and "Dombey and Son."

Thackeray's "Vanity Fair" is entertaining, but I never could get much interested in any of the rest. His Amelias are altogether too insipid for modern taste. Becky Sharp is preferable.

There are two of "The Duchess" works in the collection. She is bright and witty occasionally and harmless usually, but there is a tiresome sameness about her books, and you begin to wonder what on earth her object is in writing so much trash. You also wonder what has become of your good sense when you read one.

Rosa Carey's "Wooed and Won," "For Lilias" and "Uncle Max" are all excellent, and I am a warm admirer of the author.

"Sartor Resartus" is the only one of Carlyle's I possess, and, I may add, I've read it, which is more than the friends to whom I lent it did. Yes, I courageously waded through to the end, but left marked passages, so I would never have to read the whole thing again. I am afraid that twice reading it would be more than human nature could stand.

Black's "Shandon Bells" and "Princess of Thule" I read so long ago that I hardly remember them, but I do remember that the author had a wonderful talent for word painting of scenery. My favorite belongs to some other person's library, and is "Madcap Violet." There are others in my small library; but I'll only take time to mention the two old German books, one with a queer dingy green pasteboard cover dated 1832, the other 1834.

Now won't some of the rest of the writers tell about their books and favorite authors? —WINONA WAYNE, Eau Claire, Mich.

EXCHANGE.

1. To everyone sending a two cent stamp and 25 worsted pieces four and a half inches square, I will send a complete novel by standard author. Best go first.
2. Infant's health pattern wardrobe complete, for half ounce cream crochet silk, in spool.
3. Stocking-foot pattern, for one spool cream silk thread.
4. Child's moccasin pattern, for one spool ecru linen thread No. 70.
5. Directions, with sample, for netting hammocks, for one pieced calico block 12 x 12 inches, any pattern.
6. Directions, etc., for horse-nets, same offer.

RECIPES FOR THE FOLLOWING.

7. Cement for mending rubber shoes, etc., for 10 pieces worsted four and a half inches square.
8. Shoe polish, for the same offer.
9. Lovely toilet soap, no grease, for one ounce B. & A. waste embroidery silk.
10. Laundry soap, with or without grease, for one ounce B. & A. waste embroidery silk.
11. "Curline," for quarter of a yard pink china silk.
12. Rheumatism liniment, for quarter of a yard pink china silk.
13. Magic stamping paper, for half ounce yellow knitting silk on spool.
14. Sticky fly-paper, for quarter of a yard cream china silk.
15. Sure cure for corns, bunions, sore feet, etc., for half ounce spool yellow knitting silk.
16. Freckle and tan cure, for half ounce spool of yellow knitting silk.
17. Sure cure for chicken cholera, for half ounce block knitting silk on spool.

A word about these exchanges. You will get more than "value received" for them, for I know men and women who are manufacturing these at home and selling to their friends. The materials are in most homes or easily obtained at a drug store, and are cheap; for example, five cents' worth of the curline will make a dollars' worth.

Write name and address legibly. No communication noticed unless stamp is inclosed. —MAE SEWELL, Box 32, Janesville, Bremer Co., Iowa.

Mrs. Florence B. Jones, Saratoga, Wyo., writes: I would like to exchange silk, satin and velvet pieces for crazy work, for shells, not common snails, but rare and pretty ones. I will pay half the postage both ways. Send your shells and say what they are and where from, and I will return value in pieces and half the postage. I suppose we all have something we would like to exchange, if we only knew what others want.

Myrtle Hughes, Lincolnville, Kan., has three years' numbers of the *People's Home Journal*, one year's numbers of *Saturday Night*, and eight months' numbers of *Good Stories*, to exchange for bound books to be in good condition. Marion Harland's, Mary J. Holmes's, and Charlotte Braemes's works preferred. A number of paper-bound books and novels for "Children of the Abbey," and silk, etc., for crazy quilts.

Her Silent Power.

A famous preacher of Boston recently preached a sermon on "The Silent Power of Woman." He says that this power consists of four things. First, realness. All affectation is weakness, everywhere, in art or in life.

Second, sympathy. Realness without sympathy is light without heat; beauty without fragrance. Sympathy is that which penetrates like the sunbeams of Spring. A woman may be sincere and live from a sense of duty, but her power will be cold, like that of a marble image. It is her tenderness, united with her realness, which gives her influence.

Third, calmness. Self-control over one's emotions. The power not to notice the irritations of life, superior to petty vexations, letting what will come, maintaining her self-control.

Fourth, firmness, which is a perseverance of character; not a transient sentiment, but a fixedness of purpose, which always conquers when the purpose is right.

Household Hints.

A moth will never bother woolen goods of any kind if a cloth saturated in turpentine is in a press with them.

For bad headache pour boiling water on horseradish leaves, then wring them out and bind them on the forehead.

For painful, frozen feet, apply linseed oil and turpentine as hot as you can stand it.

For the complexion, bathe your face and hands in tepid rain water, then while damp rub fine cornmeal on morning and night.

A roasted onion is excellent for croup. Squeeze the juice out and sweeten a little. Give a half teaspoonful at a time.

Pour boiling water on the sealing-wax of your stone preserve jars and it will loosen them immediately.—ROSE HARLAN.

Written for THE AMERICAN FARMER.

The Muses' Grace.

FARMER, WEST GROVE, IOWA.

From the Muse the poet learns
All that makes a Robert Burns.
On Parnassus' mountain shore
There the lonely Muses live,
And to seeking spirits give
All they know of rhyming lore.

For the poet there's a time,
On Pegasus' back to climb.
If he mounts up he will be
In a moment far away,
Where the merry Muses play
In the school of poesy.

This is what the poets say,
But a farmer works his way,
Knows not how to court the Muse,
Has no learning of the schools,
Has no measured classic rules,
And his "feet" are in plow shoes.

TALKING IT OVER.

Hints and Opinions on Things in the Home and Out of It.

WATERMELON PICKLE.

Mrs. J. B. Scott, Fort Dodge, Iowa, writes: Mrs. Josie Crowe asks for a recipe for making melon rind sweet pickle, so I send mine. We never have any trouble about their keeping well.

Pare off very carefully the green part of the rind of a good, ripe watermelon, trim off the red core, cut in pieces one or two inches in length, place in a porcelain-lined kettle, in the proportion of one gallon rinds to two heaping teaspoons common salt, and water to nearly cover; boil until tender enough to pierce with a silver fork, pour into a colander to drain, and dry by laying out on a crash towel and covering with another; press them gently.

Make sirup in the proportion of one quart best cider vinegar to three pints sugar, boil and skim and pour over the rinds boiling hot, repeating each day until the fruit is the same color to the center, and the sirup like thin molasses. When the sirup is boiled the last time, put in the melons and boil 15 or 20 minutes, set jar near stove and skim out melons and put in jar a few at a time, heating gradually so as not to break it, then pour in sirup boiling hot. Cinnamon bark and whole cloves should be added before finishing, either tied in a thin cotton cloth or not, as is preferred. A rind nearly an inch thick, crisp and tender, is best, although any may be used.

KEEP THE BOYS ON THE FARM.

Ruth Evans says: Keep the boys on the farm. The way the boys are treated on the farm gives them either a liking or a distaste for the life. Therefore, be careful how you treat yours. The happiest, most independent life on earth is a farmer's life, and I want every one of my boys to be farmers.

To begin with, boys must like the farm, or they will either leave when old enough to act for themselves, or else when they stick to the farm by force of necessity they make poor and indifferent farmers. Hence, teach the boy a little of the carpenter's trade, a little blacksmithing, a little medicine as relates to stock, rude surgery, and above all, when he is sent to a college, send him to an agricultural college.

MAKE SOME COUGH SIRUP.

Ruth writes: I will send a recipe for a simple cough sirup, I have found very good. Take one ounce each of boneset, flaxseed, licorice root, slippery elm bark; steep thoroughly in enough water to make a pint when strained; add white sugar to make a sirup. Give tablespoonful several times a day.

FOR FUEL.

Lilla C. Hunting says: I wonder how many of your readers know that corncobs make the best of kindling wood. Take an old tin pail and fill with cobs, then pour over them one-half pint of kerosene oil. Two or three of them placed in the stove, and the wood laid on, will burn long enough to start a fire in fine shape.

Stitches.

[Contributions solicited from all readers.—ED.]

FOR FARMHOUSE:

DIAMOND LACE.

Chain 36.

1. Skip three stitches, 3 dc in next three st 2 knots (knots are made by pulling stitch out about one-half inch, and a sc back of first two threads) 11 holes, ch 5 and fasten to foundation ch, turn.

2. 10 sc under ch 5, 5 holes, 5 dc in one st, 5 holes, 1 knot, fasten in k, 3 dc, turn.

3. ch 3, 2 dc, 1 k fasten in k, 1 k, 4 h, 5 dc in first st of 5 dc, 5 dc in last st, 4 h, ch 5, fasten to edge of 10 sc, turn.

4. 5 sc under ch 5, turn ch 5 fasten in center of 10 sc, turn 10 sc under ch 5, 5 sc in next, 3 h, 5 dc in first st of 5 dc, 5 dc between next two, 5 dc in last st, 3 h, 1 k fasten in k, 1 k 3 dc on dc, turn.

5. ch 3, 2 dc, 1 k, fasten in k 1 k, 2 h, 5 dc in first st of 5 dc, 5 dc between next, 5 dc between next, 5 dc in last, 2 h ch, 5 fasten to end of 10 sc, turn.

6. 5 sc under ch 5, turn ch 5 fasten in center of 10 sc, turn 5 sc in ch 5 turn ch 5 fasten in center of next 10 sc, turn 10 sc in ch 5, 5 sc in next, 5 sc in next, 1 h 5 dc in first st of 5 dc, repeat three times, 5 dc in last 1 h, 1 k fasten in k, 1 k 3 dc, turn.

7. ch 3, 2 dc, 1 k fasten 1 k 2 h, 5 dc between 5 dc, repeat three times, 2 h ch 5 fasten at end of 10 sc turn, 5 sc under ch 5, turn ch 5 fasten in center of 10 sc, turn 5 sc under ch 5, turn ch 5 fasten in center of 10 sc, turn 5 sc, in ch 5, turn ch 5 fasten in center of 10 sc, 10 sc in ch 5, 5 sc in next, repeat twice, 3 h, 5 dc between 5 dc, repeat twice, 3 h, 1 k fasten in k, 1 k, 3 dc, turn.

8. ch 3, 2 dc, 1 k fasten in k, 1 k, 4 h, 5 dc between 5 dc, repeat once, 4 h, ch 5, fasten at end of 10 sc, turn,* 5 sc under ch 5, turn ch 5 fasten in center of 10 sc turn, repeat from* twice 5 more sc under ch 5 repeat four times, turn (this is to complete the scallop) 2 k, fasten with sc in center of 10 sc 2 k fasten between next so on all around the scallop and repeat the same process back, 5 h, 5 dc, 5 h, 1 k fasten in k, 1 k 3 dc. For next scallop commence from first row.

This is very pretty for trimming various garments and especially aprons.—ELLEN A. CLAUDE, Sherburn, Minn.

The imported reindeer is flourishing in Alaska, as the imported camel is flourishing in Australia. Thousands of camels were taken to western Australia from India, and the camel caravan has largely supplanted the bullock team there. They thrive upon the natural shrubs of the country, such as salt bush, wattle, acacai and mulga. They breed well, and the native are better than the imported.

Written for the Farmhouse.

Cook and Eat.

BY N. C. JOHNSON.

There is a giant in our land,
And people fly at his command;
You must have known him all your life—
That is, if you're a farmer's wife.
This monster would you like to greet?
His name is Mr. Cookandeat.

'Tis best to meet him with good cheer,
Although we think his name is queer.
Our morning meal is hardly done
Before we almost have to run,
Now here, now there, with busy feet
Because we have to cook and eat.

The dinner hour is almost here
(How short the Autumn days appear);
The workmen hasten from the plow;
The mid-day meal is ready now,
While all enjoy the pleasant treat
And find no fault with "cook and eat."

We wash the dishes up with care,
Another meal we must prepare;
The golden butter now we make,
We bake the bread, the pie, the cake,
While oft our watchword we repeat,
'Tis cook and eat, and cook and eat.

The day is done, our work is o'er,
And we can sit and read once more;
The day is gone, with all its care,
And soon for rest we will prepare
To dream of Heaven with joys complete,
Where people never cook and eat.

For the Home Table.

OYSTER STEW.

Here is an oyster dish that is delicious: Make a thick gravy of a pint of cream, in which two tablespoonfuls of flour and two of butter have been mixed; season with pepper, salt and mace. Add to this two dozen fresh oysters, that have been steamed in their own liquor, stir them up and serve hot. You will like it immensely.

TO COOK TURNIPS.

The nicest way to serve turnips, which should always accompany roast duck, is to peel and boil them whole till they begin to grow tender; then lift out of the water and slice crosswise; let the slices be about an eighth of an inch thick. Put the slices in a dish, sprinkle with salt and pepper, and lay lumps of nice, sweet butter around over the top of all. Bake in a hot oven till brown on top, and serve as baked.

FOR SALADS.

Pickled barberries make a pretty garnish for Winter salads. Procure the berries if possible in large clusters or bunches. Soak them in salt and water for four or five hours, drain them, and cover with scalding vinegar. The berries may be kept in brine a while if one chooses, and freshened and pickled as they are used.

RIB PIE.

Do the readers of the Farmhouse like fresh rib pie? This is the way I make them. I boil ribs tender and allow plenty of broth. Then make short biscuit dough; roll thin; cut in strips. Line a baking pan; then place a layer of ribs and a layer of dough. Cover over top with a whole piece of dough. Cut a few holes in top; add pepper, salt; then pour in broth till pan is near full. Bake to a good brown, allowing it to bake slowly.—ROSE HARLAN.

Ways to Use Celery.

CELERY TOAST.

Cut the celery in small bits and boil until tender. Drain off the water and mash the celery; put it in the saucepan with two tablespoonfuls of butter, heated; season with pepper and salt. Put a spoonful on each square of toast and send to the table hot, with thickened milk in a separate dish.

CELERY CREAM SOUP.

Boil one cup of rice in two pints of sweet milk and one pint of cream. Rub it through a sieve. Grate the blanched parts of three heads of celery and add it to the rice and milk. Add one quart of white stock and boil it until the celery is tender. Season with salt and red pepper and serve hot.

CELERY SALAD.

One hard-boiled egg, one raw egg, one tablespoonful olive oil or butter, one teaspoonful white sugar, one-half teaspoonful salt, one-half teaspoonful pepper, four tablespoonfuls vinegar, one teaspoonful made mustard, four bunches celery. Rub the yolk of the cooked egg to a paste and blend the other ingredients into a smooth, creamlike mixture, as in all salad dressings. Chop the white of an egg and add it to the celery, which should be chopped or shredded. Pour the dressing over it and serve at once.

Lamp Shade.

Simple and graceful lamp shades are made from squares of silk. One of these measures 18 inches long, and is 18 inches wide. Fold this square twice and cut out the middle. This hole should be round, to go over the chimney easily, as this kind of a shade is especially for a lamp with a round globe. The

edge of the square and middle opening are bordered by a delicately-wrought vine in silk or gold thread. The finish being of small skeins of silk drawn through the material to form tassels, and tied with gold thread. The middle opening is made strong by a double row of button-hole stitching.

Sugar in California.

The most encouraging talk we have heard in regard to any agricultural product comes from Richard Gird, the owner of the beet sugar works at Chino, Cal.

He says beet sugar making is a great success. About $300,000 worth of improved machinery, including the Steffens process of extracting sugar from the beet molasses, has recently been put in, making the plant cost fully $1,000,000.

There are 4,000 acres of beets on the Chino ranch, and 2,000 more in the vicinity. The crop will amount to about 55,000 or 60,000 tons. It would have reached 100,000 but for the dry weather. There is money in beet growing. The gross value per acre of the product of the beet land is from $80 to $90, and the net profit from $30 to $40 an acre. Last year he got 174,000 pounds of beet seed from abroad, mostly from France. This cost $20,000. "There is enough good beet land in California, from San Francisco south, to supply sugar for the whole world. The consumption is increasing fast."

A Christmas Home-Coming

AN OLD RED HOUSE IN the sunset shines. The roof, weather-beaten and gray, gleams in the distance like a silver shield. The windows blaze like beacon fires.

The old mill in the hollow has stopped its busy grinding. The long day's work is done. The little windows hung with many a fantastic drapery of cobwebs, light in a sudden glory that is seen from the village on the hill. And the maidens, watching, cry:

"Oh, the mill! Look how the windows shine! Joe has lighted his evening lamps."

They know very well it is only the sun. They like to look at the old mill, and speak of Joe's name.

But Joe is not thinking of them at all. He is shaking the dusty gray from his curly brown hair, perhaps with a consciousness of Ruth, yonder, in Aunt Prue's garden, or he dwells on the great world far away.

Let us go back to the garden and Aunt Prue. There she stands, like a tall sunflower, honest and true, looking straight and fearless into the light.

Not very beautiful is Aunt Prue, yet the children flock to her and love her; and once she was esteemed most fair.

The sun that is smiling on Joe through the dim windows of the mill flashes in Ruth's face and brightens the red on her lips, the gold in her hair. Standing thus she seemed like a fair white lily that has suddenly come to life.

Up and down the blossomy walks goes Aunt Prue.

Now, who is that leaning over the gate, just as one stood in the years ago? What if he has come back? What was it the south wind was saying?

Why, he went sailing away in just such a night as this—was it 20—was it 80 years ago? In what harbor God knows; but Aunt Prue has waited these many years, starting sometimes at a footstep, a voice, just as she does now—in vain.

How foolish. It is Joe, of course, only Joe from the mill, named for him who comes no more.

"Joe is a likely lad," Aunt Prue often says, with a little sigh.

Poor Joe, he is so tired of the lonely farm, the sleepy flocks, the dull country village, the everlasting old mill that was his farther's and his grandfather's away back in the dead and gone years.

A thousand voices call him. He longs for the whirl and rush of the great happy world outside. Yes, he must go. That is why he lingers so long by the gate to-night, for his mind is settled now.

Prue grieves at his going; so does Ruth, silently. But the blind old grandmother most of all. She remembers the sweet blossoms of her youth, when she was not blind, the tender pink of the daffodils in the lush green grass, the blue of meadow violets; you cannot mention a familiar object in the neighborhood that she does not know.

And yet Joe's face she has never seen. But she thinks it is like that of a bright and beautiful angel.

Joe is good to her. It breaks her heart to part with him. Many a tear she knits into his red stocking as she sits, always in the dark, in her quaint old chair.

But how can a lad stay with his grandmother all his days?

* * * * *

Aunt Prue's garden is all a blaze of blossoms; the mill pours out its yellow floods; seasons come and go, but Joe returns no more.

His letters that were so bright and hopeful at first are few and unsatisfactory now, and Aunt Prue wonders at the change.

Hark! That was the click of the latch. If it should be—but no. It is only a neighbor—Deacon Field—who often drops in to look at the garden.

To-night he seems ill at ease—hardly himself. Something is evidently on his mind. He stares about in a helpless way, wipes his face with his red bandanna, speaks of the weather and the crops, without paying any attention to Aunt Prue's replies, and, finally, half turns to go; then suddenly faces about and asks in a hesitating way if they have heard from Joe lately.

Something in his face alarms Aunt Prue. Now, too, she notices that he has a newspaper in his hand.

"What is the matter?" she cries, sharply. "What has happened? Is anything amiss with Joe?"

"I dunno—I am afraid—it 'pears to me the boy has got into some sort of trouble," he says, slowly unfolding the paper. "But it may be only a story, you know. I thought it no more'n neighborly to let you see."

Aunt Prue reads it in a dazed way, without in the least comprehending it. The words seemed to dance and jumble together before her eyes like jumping-jacks, and her voice had a curious, far-away sound to her.

"Our Joe a thief!" she shouts, suddenly turning on the Deacon with flashing eyes. "I'll never believe it. Why, I saw him grow up from a slip of a lad, a mere baby, and I ought to know. Don't tell me," she goes on in a high, unnatural voice. "It is somebody else. It was never our Joe—never!

"You did no more than you thought was right, Neighbor Field, but it does surprise me that you could ever imagine it might be true of our Joe."

"Well, well, ruefully answers the Deacon, feeling that he has suddenly sinned against light and reason and Aunt Prue and Joe, all together, "we all make mistakes, and you hadn't orter lay it up agin me. I meant no harm to the boy. I guess he's all right he concludes, a little doubtfully.

"Why, I'll go and see," cried Aunt Prue, starting up.

"You can have old Don to go to the depot," and the Deacon brightens a little at the opportunity to redeem himself.

Alas! Before she has time to set forth on her hasty journey the long-looked-for letter comes from Joe. It is all true. Yes, he is a thief.

Joe has not many words at command. It is a hasty, blotted scrawl that Aunt Prue holds and reads with staring eyes.

The letter is very vague. She must know what it means. And away she hies to the distant city that has engulfed poor Joe.

The heavy door that shuts Joe away from the sunny world outside, swings back, revealing a figure sitting motionless on the narrow pallet, his face hidden in his hands.

"Joe, dear boy."

"Oh, Aunt Prue."

He turns his head, but she sits by him and takes his hand, that has grown white and delicate since the days at the mill, while slowly and in a broken voice he tells her all.

It is the old story. In a fatal moment his hands had garnered unlawful gold. He never meant to be a thief, but money he must have; only a little, and he meant to replace it soon—and now he must have a trifle more, he will surely pay it somehow. So it goes, until the day of discovery—Joe's hands are empty, and the money is gone.

"Aunt Prue, it is all over," he says, bitterly, at last. "I have thrown my life away. I was a coward and a fool—yes, and a thief. But I will bear my punishment like a man, for I deserve it."

Aunt Prue says not a word.

"But when I go outside again," he goes on hopelessly, "who will trust me? Who will believe me? I might better be dead and out of the way."

"Who will believe you? I will. Who will trust you? We all will—we who know you; and for the rest you must learn not to mind."

Then she stops. Aunt Prue is very conscientious, very strict in her ideas of right and wrong, and this is an awful thrust.

"I don't say but that I blame you, Joe," she says slowly. "You have done a dreadful wrong, and it is right that you should pay the penalty." Here she breaks down at the sight of Joe's pale face. No—she cannot preach to him, she has not come for that.

"We love you, Joe, she says brokenly, and we shall wait for you to come back to us. Yes, you come home and live it down,"

Three years in prison. That is the end of all Joe's bright dreams in the old mill.

Aunt Prue mortgages the meadow and sells the wood lot. The south wind will sing no more to her when the pine trees are cut away to pay for Joe's stolen money.

And now Joe sits silently in prison, making shoes. And he has time to think, think, till his brain whirls. Blessed be the work that comes to keep him from going wild. How he hates himself for being there.

How his mind goes back to his home in these silent days. He knows when the farm work begins to drive, and snow melts, and the early flowers blossom.

Sometimes he walks with Ruth in the woods. Oh, what does Ruth think of him now?

He sees the flash of the mower's scythe. The cornstalks are gathered, ready for the mill some day; the apples are piled in rosy heaps in the orchards; the nuts ripen in the clear October weather; suns rise and set; holidays come and go; but behind the dreary bars life moves on, ever the same.

And now the blind old grandmother drops her knitting forever, without knowing why Joe tarries away so long. She thinks he is working too hard, poor boy.

Joe sends her tender and loving letters that the warden reads, and Aunt Prue reads again to the simple, trusting old soul, and she dies at last with a letter from Joe in her withered hand.

Joe loved her; but he is glad she is gone; glad that she never knew the truth.

Many a kindly word finds its way to Joe from the people he used to know. They sent for him to come and be their miller again. Aunt Prue wishes it.

But Joe thinks he would almost die of shame to look in the old familiar faces.

His time is shortened by good behavior, and he walks forth a free man one day, not knowing where to go. He is not used to people yet, and almost craves the shelter of the prison walls.

The turnkey's wife has been good to him; she asks him to stay a few days and work about her garden, and he is glad to do it. He cannot face home yet.

Before he has settled what to do there comes a cry from the South, where the pestilence is raging—a cry for help. He reads how the dead and dying have no one to care for them, and his uncertainty is over.

"What is my life worth?" thinks Joe. "And, at any rate, I am not afraid. Let me go and help."

Careless of his own life, at first half hoping to lay it down, he soon loses all thought of self in the awful scenes about him. He wishes he had a thousand lives to give, a thousand right hands to hold out to the dying.

Strange how sweet it is to live and be of use again. Why, for three years he has been dead. If he has not felt the daisies growing over him he has sometimes thought he was slowly turning to stone.

And now, thank heaven, he is alive. Restless and tireless everywhere, with steady hands and a cool, clear head he goes from one to another like a strong, glad angel.

Now, many a soul is fain to go, resting its hope on the words that fall from poor Joe's lips. How they bless him. The good name he trampled in the dust is borne to heaven on their dying prayers.

And Joe has looked in many faces again, and was not ashamed. Nay—rather, he is glad to be alive.

RUTH.

No more hiding away from his fellow-men. Let his good name take care of itself. If the pitiful story of his fall can help any thoughtless lad to stop in time, he has not suffered three years in vain.

Joe wakes one morning with a strange feeling. What does it mean? It cannot be the fever, he thinks. He is only tired. He will be all right, he says, in a few hours, when he has slept again.

He closes his eyes, and seems to see hands reaching out to him on all sides for help. Oh, those hands that he cannot lift up—he who has been so strong.

In his delirium he is at home again. All about the old places he wanders, but everywhere something is wrong. He looks for water and the spring is dry. The peaches turn their rosy faces to the sun, but he cannot reach them. The grapes hang cool by the river side, and the water ripples over the stones.

All at once an angel comes to comfort him. Right in the midst of his confused babblings shines the blessed face of Aunt Prue. She belongs to the dream, he thinks, and she bears in her hands a red, red rose from Ruth—how strange. In all Joe's prison days he had never sent her a message nor spoken her name.

All night he is wandering in Aunt Prue's garden—red roses, white lilies on every hand. Ruth, too, is there. What was it she was saying? What was it about her? Was she lost? He thought so.

Yet here she is, with a smile on her face. He tries to speak to her, but the words fly, hither and yon away, like the restless doves.

But when he wakes in the fierce sunrise, he knows it is truly Aunt Prue. She has come like a breath of fresh air from home. He looks calmly in her eyes and smiles.

"Aunt Prue," he says, faintly, "I—was—going—to—try—again—but it's too late. It's—no—use—now."

"Oh, Joe, don't say that. I will never let you go."

"Tell Ruth," he whispered, after a while, "in heaven, may be, she will not blush for Joe. May be she will be sorry," he whispers, and wanders again.

Yes, Ruth will be sorry if he goes. But she is young and life is sweet. It is Aunt Prue who will remember how she went down to the river with the poor lad.

Old Aunt Chloe steals in with a bunch of late lilies in her hand. She lays them tenderly on Joe's pillow and creeps silently away.

The doctor comes and goes and comes again. People waylay him on every side to ask for the sick man until he is almost beside himself.

Aunt Prue is faint and weary, but she knows it not. She watches every breath and waves a fan with a noiseless movement and all the regularity of a machine.

Almost morning. Oh, what is this? A rustling sound through the lifeless trees. There has been rain somewhere. A wind is sweeping down from the mountains fresh and cool.

And Joe falls into a quiet sleep, so still it seems like death. Hours pass. Slowly, slowly, out of the depths, back from the river he is coming.

Aunt Prue thinks it was her watchful care that saved him.

The doctor is confident it was his superior skill.

Aunt Chloe knows it was her prayers.

It might have been the mission of the red, red rose!

It is Christmas day when they return. The little station is full of people. Joe sees them from the car window and wonders where they can be going.

As he steps on the platform, trembling, for he is not strong yet, a dozen stout fellows rush to take him in their arms. The old church bell, close by, rings out a joyful peal, while, "Welcome home," "Peace on earth, good will to men," sounds on all sides.

Home indeed. No dream, now. The very rocks and trees seem to know him and give him friendly greeting.

There is the old mill, with a welcome on all its dusty panes. Joe looks at Aunt Prue and smiles, but there are tears in his eyes.

And who is this standing shy and sweet, in the open door of Aunt Prue's house? It is Ruth.

One day a surprise comes to Joe. An old man, whom he nursed back to life in those dreadful weeks, only to die a few months later, in grateful memory of Joe, leaves him all his fortune. Joe is rich. He can buy back the woodland for Aunt Prue, and redeem the meadow. He was trying to do it by careful toil.

Now he is free to go out to his work. In cities, in out-of-the-way places, in prison, everywhere, Joe is laboring for fallen humanity. Many a poor fellow is glad to rise again, clinging to his friendly hand.

And Aunt Prue says thankfully, "Poor Joe. He has lived it down."

Through the fragrant pines the south wind sings endless peans of praise.

And Ruth? She gathers roses for Joe in Aunt Prue's garden.

And the old red house in the sunset shines.—*Boston Globe.*

If a Horse Could Speak.

An exchange puts the following words into the mouth of the horse:

Don't hitch me to an iron post or railing when the mercury is below freezing. I need the skin on my tongue.

Don't leave me hitched in my stall at night with a big cob right where I must lie down. I am tied and cannot select a smooth place.

Don't compel me to eat more salt than I want by mixing it in my oats. I know better than any other animal how much I need.

Don't think because I go free under the whip that I don't get tired. You would move up if under the whip.

Don't think because I am a horse that iron, weeds, and briers won't hurt my hay.

Don't whip me when I get frightened along the road, or I will expect it next time, and perhaps make trouble.

Don't trot me up hill, for I have to carry you and the buggy and myself, too. Try it yourself some time. Run up a hill with a big load.

Don't keep my stable very dark, for when I go out into the light my eyes are injured, especially if snow be on the ground.

Don't say "Whoa!" unless you mean it. Teach me to stop at that word. It may check me if the lines break, and save a run-away and smash-up.

Don't make me drink ice-cold water, nor put a frosty bit in my mouth. Warm the bit by holding it a half-minute against my body.

Don't ask me to back with blinds on. I am afraid to.

Don't run me down a steep hill, for if anything should give way I might break your neck.

Don't put on my blind-bridle so that it irritates my eye, or so leave my forelock that it will be in my eyes.

Don't be so careless of my harness as to find a great sore on me before you attend to it.

Don't lend me to some blockhead who has less sense than I have.

Don't forget the old book that is a friend to the oppressed, that says: "A merciful man is merciful to his beast."

The Christmas Peacock.

The preparation of the peacock, once placed in state on the English Christmas dinner-table, is thus described: "The skin was first carefully stripped off with the plumage adhering; the bird was then roasted; when done and partially cooled, it was sewed up again in its feathers, its beak gilded, and so sent to the table. Sometimes the whole body was covered with leaf-gold, and a piece of cotton, saturated with spirits, placed in the beak and lighted before the carver commenced operations.

"This 'food for lovers and meat for lords' was stuffed with spices and sweet herbs, basted with yolk of egg, and served with plenty of gravy. The noble bird was not served by common hands; that privilege was reserved for the lady guests most distinguished by birth or beauty. One of them carried it into the dining-hall to the sound of music, the rest following in due order. The bearer of the dish set it down before the master of the house, or his most honored guest."—*Exchange.*

How to Increase a Ewe's Milk.

Adam Speed, who wrote much and well on keeping sheep in 1629—265 years ago—on this subject said: Change their pasture, if you find their udders are drying up, or that they have but little milk, but let it be short and sweet, nothing inferior, but rather exceeding that they are removed from; for, indeed, nothing (says he) increases milk in ewes more than change of pasture and fresh feeding, and if the ground gives opportunity, drive them one while to the hills, then again to the valleys; and where it is sweetest and short, they will eat with the best appetite, there see they continue the longest, and to bring their milk down apace, give them, mingled with short grass, or short hay, vetches, dill, anniseeds, and the like, and their milk will spring apace.—*Ellis on Sheep.*

An industry of which little is known seems to flourish in the vicinity of Lompoc, Santa Barbara County, Cal. It is reported that 40,000 sacks of mustard were grown there the past season, which sells at three cents a pound.

THE ENIGMA.

[For the leisure hour of readers, old and young. All are invited to contribute original puzzles and send solutions to those published. Answers and names of solvers to this issue will appear in two months. An asterisk (*) after a definition signifies that the word is obsolete. Address letters for this department: "Puzzle Editor," AMERICAN FARMER, 1729 New York Ave., Washington, D. C.]

ENUCLEATIONS.—NO. 6.

43—Coleridge's rime of ye ancient mariner.

44—
MALACCACANES
ANATHEMATIS
LACTARENES
ATTIRANTS
CHARISIA
CERASMA
AMENTA
CANTA
ATES
NIS
ES
S

46—
PASSACAGLIAS
ANTIPATHIST
STENOSTOME
SINISCOLA
APOSTOLE
CASCOES
ATTOLS
GHOLE
LIMA
ISE
AT
S

45—Gates; Stage.

47—Shy; She.

48—
M
PEC
MADOR
LATINER
MATRASSES
PATRISTICAL
MEDIASTINITIS
CONSTIPATED
RESINATES
RECITES
SATES
LID
S

49—With; It.

50—
M
PIS
CANES
POLICES
LIVESTEAM
FORESTALLED
POTTERIES
TERRILL
DAISY
EAT
L

51—White-cap.

52—
P
MEM
MERAN
MARENAS
CARINATES
DELITIGATES
SELENOCENTRIC
SALTWATERTAILOR

☞ The above is a list of answers to competitive batch No. 2. Author: CYNICUS.

NO. 73—ANAGRAM.

Each soul in grand mental set-to
His rival has tried to outdo;
When "Chet" announces the winner,
It possibly, Prince, may be you!

NO. 74—DIAMOND.

1. A letter. 2. To edge. 3. The first discovered asteroid. 4. Mysteries. 5. Blunts. 6. The operation of removing a cataract by thrusting a needle through the corner of the eye, and breaking up the opaque mass. 7. Small fish of the Mediterranean. 8. Satyrs.* (Cent.) 9. The two divisions of organic beings formed on the distinction of male and female. 10. A town of Asia Minor. 11. A letter.

NO. 75—CHARADE.

A lass I knew in the days gone by,—
The fond recollection makes me sigh!
Her locks were like the lily LAST,
Her PRIMAL feet were simply vast,—
Egad! she had a mouth for pie!

A catching cast in her sea-green eye;
Form like an hour-glass struck all awry;
The dearest memories still outlast
A lass I knew.

For her big dower I thought I'd try,
But ere the question I could ply
My TOTAL heart was sad downcast
And I was no enthusiast—
Her father's wealth had gone sky-high
Alas I knew!

NO. 76—SQUARE.

1. Consumptive. 2. Any native compound of iron from which the metal may be profitably extracted. 3. Stronger. 4. Beginning.* 5. The coarse tow of flax and hemp. 6. Interstices or small spaces. 7. A Linnean genus of parasitic Entomostraca.

NO. 77—FINAL LETTER CHANGE.

O happy youth with the clothes COMPLETE,
All day long the old FOURTH* is his seat,
Waiting and watching for fish to bite;
Homeward he goes with a mess at night,
To dream of seeing the SECONDS bore,
As he has seen them the day before.
Perchance, too, he dreams of fields of THREE
Growing wild in its home o'er the sea.
Will he be happy in after years,
When the busy care of life appears?
And he finds a stool is his daily seat
While he wrestles with a balance sheet!
*Century.

NO. 78—DIAMOND.

1. A letter. 2. A large Australian bird. 3. Exempt. 4. The states of needing. 5. To boil up.* 6. A dry kind of sherry of a light color. 7. Want of culture. 8. The hake. (Cent.) 9. To gaze at. 10. A town of the Netherlands, in Gelderland. 11. A letter.

NO. 79—BILITERAL TERMINAL DELETION.

When I get time—
I'll write up flats galore;
Charades on "sweet-heart" and "con-tent"
And such words by the score.

When I get time—
The forms will flow out fast;
And they will be beset with tags—
Mostly on old lines cast.

When I get time—
Long "headers" I will try
Anent the Mystic sisterhood,
And Puzzledom's small fry.

When I get time—
I'll win all the prizes,
Where now I'm ONE to TWO for them,—
Lack of time premises.

When I get time—
O shall I e'er attain it!
(All Puzzledom prays that I don't.)
Just now I cannot gain it—
I have no time.

NO. 80—SQUARE.

1. A parish of England. (Lipp., Old Ed.) 2. Filled with interstices. 3. A cellular layer derived from the nucleus of an ovule and surrounding the embryo sac. 4. Drawers, cupboards, compartments or chests. 5. Alienates. 6. A village of Italy, on the Mediterranean. 7. Postoffice, Camden Co., N. J.

NO. 81—CHARADE.

When a puzzler arrives
In the SECOND at "Philly,"
He's met by another
In a manner not chilly,
And invited at once
In to Green's bacchic palace,
That his ALL he may test
As his lips press the chalice.
He now boards a grip-car
And is yanked by quick transit
To the site of the Zoo,—
And admiring he scans it.
A small rodent, the FIRST,—
From the tropics 'twas brought in,—
He sees and concludes that
Its odd name must be wrought in
With another queer word
To compose a charadette;
But ere starting for home
In his mem'ry's mislaid it!

NO. 82—DIAMOND.

1. A letter. 2. A small European snipe. 3. A Jewish festival. 4. Incomplete paralysis. 5. Oaths. 6. Outward forms. 7. To free. 8. Painted with vermilion. 9. A station. 10. A festival in English country places. 11. A letter.

The Grange.

Seven of the subordinate Granges of Peoria County, Ill., meet in halls of their own. Most of these are commodious two-story buildings, well-fitted up, and furnished with kitchen and table ware, organs, pictures, libraries, carpets, and other homelike articles.

THE MARKETS.

Review of the Fortnight.

Produce.

NEW YORK, Dec. 25.—Butter—The receipts of butter for the past six days were 29,485 pks. The market for butter is not active. State dairy is very quiet. Choice and fancy creamery is in limited supply, and prices are steady, but other qualities are rather dull. Imitation creamery is quiet, and Western factory is quite dull. We quote:

State dairy, half-firkin tubs, choice, per pound	18 a19
State dairy, firkins, choice, per pound	17 a18
Eastern creamery, choice, per pound	20 a21
Western creamery, choice, per pound	22 a23
Western dairy, choice, per pound	14 a15
Imitation creamery, choice, per pound	17 a18
Western factory, firkins, choice, per pound	13½a14

Beans and Peas—The market for beans is quiet, and prices are quite easy. Red kidneys are rather dull. Receipts of foreign beans have been very large. Green peas are very easy. We quote:

Beans, marrow, choice	$2 10a$2 12½
Beans, pea, choice	1 65a 1 70
Beans, red kidney, choice	1 95a 2 00
Beans, white kidney, choice	2 30a 2 35
Beans, black turtle soup	2 00a 2 05
Beans, yellow eye, choice	2 05a 2 10
Beans, Lima, California, per 60 pounds	2 80a 2 90
Green peas, barrels, per bushel	....a 1 05

Cheese—Trade in cheese is very quiet, buyers not being anxious to purchase, while receivers maintain prices with confidence. Prices of fancy cheese are firmly maintained.

State factory, September make, large, white, fancy, per pound	10½a11
State factory, September make, large, colored, fancy, per pound	.. a11½
State factory, full cream, choice, per pound	.. a10½
State factory, full cream, large, common to prime, per pound	9 a10½
State factory, full cream, small, white, fancy, per pound	.. a11½
State factory, small colored, fancy, per pound	11½a12
State factory, full cream, small, fair to choice, per pound	9½a11½

Dried Fruits and Nuts—Choice evaporated apples are steady. Sun-dried apples are scarce. Chopped apples are firm. Cherries are very quiet. There is a fair demand for raspberries and blackberries. Apricots are steady, but peaches are quiet. Peanuts are not active, and prices are quite easy. Chestnuts are scarce, and choice are very firm. Pecans are quite steady. Hickory nuts are scarce and firmer.

Apples, evaporated, new, choice, per pound	7½a 8
Apples, evaporated, new, prime, per pound	6½a 7½
Apples, evaporated, ordinary, per pound	6 a 6½
Apples, sun-dried, sliced, per pound	5½a 6½
Apples, chopped, per pound	1½a 2½
Apples, cores and skins, per pound	.. a 1
Cherries, per pound	12½a 13½
Raspberries, evaporated, per pound	. 18 a . 18½
Blackberries, per pound	. .6 a . .6½
Apricots, California, new, per pound	. .8 a . 10½
Peaches, California, peeled, per pound	. 12 a . 16
Peaches, California, unpeeled, per pound	. .7 a . 10
Peanuts, fancy, per pound	. .. a . .3½
Peanuts, good, per pound	. .. a . .2½
Peanuts, Virginia, shelled, per pound	. .1½a . .3½
Peanuts, Spanish, shelled, per pound	. .2½a . .4½
Pecans, ungraded, per pound	. .4 a . .5
Walnuts, per bushel	. 50 a . 75
Chestnuts, choice, per 60-pound bushel	$2 50 a$3 00
Chestnuts, poor to good, per 60-pound bushel	1 00 a 2 25
Hickory nuts, new, per 50-pound bushel	2 50 a 3 00
Bull nuts, per bushel	1 00 a 1 25

Eggs—The cooler weather and light supply of really choice, fresh eggs has strengthened the market somewhat, and prices of such are quite steady. Other qualities of fresh eggs are very quiet. Refrigerator eggs are selling very slowly, and limed eggs are generally dull.

State and Pennsylvania, fresh-gathered, choice, per dozen	. .. a . 22
Western, fresh-gathered, choice, per dozen	. 21 a . 21½
Western, fresh-gathered, fair to prime, per dozen	. 18 a . 20
Southern, fresh-gathered, fair to prime, per dozen	. 18 a . 20
Western, early packed, refrigerator, good to choice, per dozen	14 a 18
Western, in refrigerators, per case	2 00 a 3 50
Limed, per dozen	13 a 13½

Fresh Fruits—There is a good demand for choice table apples, and prices of such have advanced. Grapes are becoming scarce, and choice qualities are quite firm. There is a good demand for cranberries, and prices of good and medium grades have advanced. Oranges are plentiful, but the demand is quite active, and prices have advanced. Mandarins and tangerines are steady. Grape fruit is quite steady.

Apples, Baldwin, Northern, prime, per double-head barrel	2 00 a 2 75
Apples, Spy, Northern New-York, per barrel	2 00 a 2 75
Cranberries, Cape Cod, dark, fancy, per barrel	12 50 a 13 00
Cranberries, Cape Cod, dark, fair to prime per barrel	10 00 a 12 00
Cranberries, New-Jersey, per crate	2 75 a 3 25
Grapes, Western New-York Catawba, per small basket	15 a 18
Grapes, Western New-York, Concord, per small basket	15 a 18
Oranges, Florida, choice, brights, per box	1 87 a 2 00
Oranges, Florida, prime, per box	1 62 a 1 75
Oranges, Florida, russet, prime, per box	1 50 a 1 75
Oranges, Florida, poor, per box	1 00 a 1 37
Oranges, Mandarins, per box	1 75 a 2 50
Oranges, Tangerines, per box	2 50 a 3 50
Grape fruit, per box	2 00 a 3 50

Hay and Straw—There is hardly any change in the market for hay and straw. Receipts are liberal, while the demand is very moderate and prices are easy. We quote:

Hay, No. 1, per 100 pounds	75a..
Hay, No. 2, per 100 pounds	65a..
Hay, No. 3, per 100 pounds	60a65
Hay, clover, per 100 pounds	45a50
Hay, clover, mixed, per 100 pounds	50a55
Hay, shipping, per 100 pounds	50a55
Hay, salt, per 100 pounds	40a45
Long rye straw, per 100 pounds	50a55
Short rye straw, per 100 pounds	40a45
Oat straw, per 100 lbs	40a45
Wheat straw, per 100 lbs	40a..

Poultry—The market for live poultry has been in a satisfactory condition for the Christmas trade. Receipts were large last week, but the demand was good, and this week opened with a continued good demand for live chickens and fowls, and prices ruled quite steady. There is a good demand for prime live geese and ducks. Live turkeys, however, are plentiful, and prices are not steady. In the market for dressed poultry trade is certainly better than during the Thanksgiving season. During the latter part of last week dealers bought as liberally as they could be expected to do in mild weather. Arrivals thus far this week have been quite large, and, although for a while very good sales were made, continued liberal receipts had the effect of weakening the market, and prices declined. Chickens and fowls are not plentiful, but the demand has fallen off. There is a fair demand for choice dry-packed turkeys, but iced are quite dull. There is a good demand for choice ducks and geese.

LIVE POULTRY.

Geese, Western, per pair	$1 12 a$1 37
Geese, Southern, per pair	1 00 a 1 25
Ducks, Western, per pair	50 a 75
Ducks, Southern, per pair	50 a 60
Chickens, Western, per pound	7 a 7½
Fowls, Southern, per pound	8 a 8½
Fowls, Western per pound	.. a 8½
Roosters, old, per pound	.. a 5
Turkeys, mixed, per pound	8 a 9

DRESSED POULTRY.

Chickens, New Jersey, dry-packed, prime, per pound	10 a 12
Chickens, Western, dry-picked, prime, per pound	9 a 9½
Chickens, Western, iced, dry-picked, choice, per pound	.. a 9
Chickens, Western, iced, scalded, choice, per pound	8½a 9
Fowls, Western, dry-packed, prime, per pound	8 a 8½
Fowls, Western, iced, dry-picked, prime, per pound	8 a 8½
Fowls, Western, iced, scalded, prime, per pound	.. a 8
Turkeys, New-Jersey, dry-packed, good to fancy, per lb	10 a 12
Turkeys, Michigan and Ohio, dry-packed, good to choice, per lb	10 a ..
Turkeys, other Western, dry-picked, prime, per lb	9 a 9½
Turkeys, Western, scalded, dry-packed, prime to fancy, per lb	9 a 10
Turkeys, Western, dry-packed, common to fair, per lb	7 a 8
Turkeys, Delaware and Maryland, dry-packed, good to choice, per lb.	10 a 11
Turkeys, Western, iced, dry-picked, prime, per lb	.. a 9
Turkeys, Western, iced, scalded, prime, per lb	8½ a 9
Turkeys, Western, iced, inferior to fair, per lb	7 a 8
Ducks, Western, dry-packed, per lb.	10 a 12
Geese, Maryland, dry-packed, good to prime, per lb	11 a 12
Geese, Western, iced, per lb	7 a 9

Vegetables—Trade in domestic potatoes is slow, and foreign potatoes are weak. Sweet potatoes are quiet. Prime onions are somewhat firmer. Cabbage is steady. Receipts of celery have been large, and prices weakened. Cauliflower is irregular in quality and price. Prime string beans are firmer. Kale and spinach are quite steady. There is a good demand for green peas. Egg plant is steady. We quote:

Potatoes, Michigan, prime, per 180 pounds	$1 50 a$1 62
Potatoes, Maine, Hebron, per sack	1 75 a . ..
Potatoes, State, prime, in bulk, per 180 pounds	1 50 a . ..
Potatoes, New Jersey, prime, per barrel	1 50 a . ..
Patatoes, New Jersey, poor to good, per barrel	1 00 a 1 37
Potatoes, English, per 168-pound sack	1 50 a 1 75
Potatoes, Scotch, per 168-pound sack	1 65 a 1 75
Potatoes, German, per 158-pound sack	1 50 a 1 75
Sweet potatoes, Southern New Jersey, per barrel	1 50 a 2 00
Sweet potatoes, Upper New Jersey, per barrel	1 25 a 1 50
Onions, Eastern, red, per barrel	1 75 a 2 00
Onions, white, large, prime, per barrel	7 50 a 8 00
Onions, white, inferior to good, per barrel	3 00 a 7 25
Onions, Western, yellow, per barrel	1 00 a 1 37
Cabbage, per 100	1 00 a 4 00
Celery, Western, good, per dozen roots	30 a 50
Celery, short, per dozen roots	15 a 35
Cauliflower, choice, per barrel	3 75 a 4 00
Cauliflower, poor to good, per barrel	1 00 a 3 50
Turnips, Canada, Russia, per barrel	65 a 75
Cucumbers, Florida, choice, per crate	2 75 a 3 00
Cucumbers, Florida, common to good, per crate	1 00 a 3 00
String beans, Florida, per crate	1 00 a 3 00
Eggplant, Florida, per barrel	2 50 a 5 00
Kale, Norfolk, per barrel	50 a 60
Spinach, Norfolk, per barrel	1 25 a 1 75
Spinach, Baltimore, ber barrel	1 00 a 1 25
Green peas, Florida, per crate	1 00 a 3 00
Radishes, Norfolk, per 100	50 a 2 00
Lettuce, Norfolk, per basket	75 a 1 00
Lettuce, New Orleans, per barrel	5 00 a 7 00

Sundries.—We quote:

Beeswax, Southern, pure, per pound	30 a 31
Beeswax, Western, pure, per pound.	29 a 30
Honey, white clover, one-pound boxes, per pound	12 a 14
Honey, white clover, two-pound boxes, per pound	11 a 12
Honey, buckwheat, one-pound boxes, per pound	10 a 11
Honey, buckwheat, two-pound boxes, per pound	9 a 10
Honey, extracted, State, per pound.	5 a 6½
Honey, extracted, Southern, per gallon	40 a 50
Maple sugar, prime, per pound	6½a 7½
Maple sirup, prime, per gallon	65 a 75

Horses.

NEW YORK, Dec. 26.—Receipts liberal, but demand fair for the best class of draft horses, and all sorts for gentlemen's private use, both saddlers and drivers. Prospects for the coming year are considered fairly encouraging, by both Western and city dealers. Quotations are given as follows:

Draft horses	$150 a $300
Streeters	90 a 140
Express teams	300 a 500
Carriage teams	350 a 700
Single drivers	150 a 375
Saddlers	170 a 350
Chunks and general purpose	55 a 115

Grain.

CHICAGO, Dec. 28.—The following shows the range of prices:

		Open.	High.	Low.	Close.
Wheat	December	.53	.53½	.53	.53½
	May	.57½	.57½	.57½	.57½
Corn	December	.45½	.45½	.45½	.45½
	May	.48½	.48½	.48	.48½
Oats	December	.28½	.28½	.28½	.28½
	May	.31½	.31½	.31½	.31½
Pork	December	11.15	11.35	11.15	11.35
	January	11.20	11.42	11.17	11.42
	May	11.57	11.85	11.57	11.85
Lard	December	6.65	6.72	6.65	6.72
	January	6.72	6.75	6.65	6.75
	May	6.90	7.00	6.90	7.00
Ribs	December	5.65	5.70	5.65	5.70
	January	5.62	5.70	5.62	5.67
	May	5.92	6.00	5.90	6.00

Wool.

BOSTON, Mass., Dec. 27.—The demand for wool has been moderate, and the sales were only 2,200,000 pounds of all kinds for the week. In prices there is no change, though the tone is weak as usual on a quiet market. Ohio fleeces are dull at 17a18 for X X and XX and above, and 18a19 for Michigan X sold at 15a15½. No. 1 combing wool is dull and nominal. Ohio fine delaine sold at 19a19½, the latter for choice Michigan; fine delaine nominal at 18. Unwashed combing sold as high as 18½ for choice three-eighths Kentucky, and from that down to 16. Territory and similar wools are in fair demand, with sales mostly at 8a12, or on a scoured basis of 30a33 for fine and fine medium and 28a30 for medium. Fall Texas and California sold at 25a28 clean. Pulled wools are in steady demand. Australian wool sells well at 18a22 and foreign carpet wools are in better demand.

Cotton.

NEW YORK, Dec. 27.—The following shows the range of prices:

	Op'g.	High.	Low.	Close.
January	5.47	5.53	5.47	5.62
February	5.57	5.60	5.56	....
March	....	....	....	5.60
April	....	....	....	....
May	5.66	5.70	5.66	5.69

Galveston, Dec. 27—Cotton dull; middling, 5 1-16; low middling, 4 11-16; good ordinary, 4½.

Norfolk, Dec. 27—Cotton steady; middling, 5½; low middling, 4 11-16; good ordinary, 4 1-16.

Savannah, Dec. 27.—Cotton steady; middling, 5 1-16; low middling, 4½; good ordinary, 4½.

New Orleans, Dec. 27.—Cotton firm; good middling, 5½; middling, 5 1-16; low middling, 4 13-16; good ordinary, 4 9-16.

The wages paid to laborers in the hemp mills of Budapest, Austria, is 40.6 cents a day for laborers; 56.8 cents a day for breakers, and 70 cents a day for hackers.

Mighty Happy.

Oh, we're feelin' mighty happy,
As along the road we jog;
For the fat is on the 'possum,
An' the bark is on the dog.

An' life is not a riddle,
But is happiness complete;
For the bow is on the fiddle,
An' the move is on the feet!

Then sing the joy of livin',
An' just go it with a whoop!
For the cash is on the counter,
An' the oyster's in the soup!
—F. L. STANTON in *Atlanta Constitution*.

A Phenomenon.

"Human beings cannot see in the dark," remarked the teacher.

"Sister can," replied the small pupil, resolutely.

"Are you sure?"

"Yes'm. The hall was dark the other night, but sister knew that Mr. Jones had shaven off his mustache before he said a word about it."—*Washington Star*.

A Christmas Episode.

Guest (alarmed at new arrivals, to host)—Ef dey keeps on like dese two, hadn' 'yo bettah yank down de miz'letoe an' call de game off?—*Judge*.

Filling the Bill.

—*Life*.

An Unlucky Name.

Everett Wrest—Don't you ever feel like you would like to go back to the place you was borned?

Dismal Dawson—Lord, no! The name of the place is a hoodoo. I come from Bath, Maine.—*Cincinnati Tribune*.

When She Had Finished.

Hallie—How delightfully entertaining Miss Closemouth is?

Percy—Is she well informed?

Hallie—Oh, yes; I told her everything I knew about everybody.—*Inter Ocean*.

In Professional Parlance.

"Do you reckon that Congress'll put out any important acts this session?" said the song-and-dance man to the stage carpenter.

"Nope. 'Bout the only one of any importance'll be the vanishin' gentleman act."—*Washington Star*.

The Farmer's Mistake.

"Jerusha," cried Farmer Haymow, "come here an' look at this young man on a bicycle. I'll be dinged if he hain't got his hair as long as a woman's."

"Sho!" exclaimed Jerusha, when she had adjusted her spectacles, "that there's a gal in bloomers."—*New York Press*.

"The End."

Billy—Say, yer pop finished that book o' mine?

Jackey—Which one?

Billy—"Masked Rangers o' Sante Fe."

"Jackey—Uh-huh!

"Billy—How'd he like it?"

Jackey—Bully! Said he never saw nuthin' burn nicer.—*Cleveland Plaindealer*.

Uncertainty.

"She is determined to be a musician but can't decide whether to make a specialty of the violin or the piano."

"Has she no positive predilection for either?"

"Oh, yes, but some of her friends think she looks better standing, and others that sitting is more becoming to her."—*Detroit Tribune*.

She Has a History.

Fingle—There goes a woman with a history.

Fangle—That female who just left your office? How do you know?

Fingle—She worked for an hour trying to sell it to me.—*Buffalo Courier*.

A Severe Test.

Will—Has he an even disposition?

Maurice—I should say so! Why, I've seen him button on a 15 collar on a 15½ shirt, and then dance at a ball all night, with a smile on his face.—*Smith, Gray & Co.'s Illustrated Monthly*.

A Fish Story from Africa.

"Domingo's nose took a Grecian turn; he scratched his head, and uttered a few expressions in negro dialect. Then he made a bait with codfish; but, alas, the little fishes didn't like salt cod.

"This time Domingo was at his wits' end. Corned beef, sardines, and codfish were everything that there was eatable on board. He sat silent and dejected.

"'These little fishes would no doubt like fresh meat,' I said to Domingo.

"'I haven't any,' he said, sadly.

"'Make some fresh meat,' I said. And you may believe me or not, as you like, but he did. With his sharp knife, from the thick part of his heel, a little at one side where the hard flesh joins the tender, he proceeded to cut a little morsel with which he baited his hook. It was apparently exactly what the little fishes wanted, for they precipitated themselves upon it voraciously. The results were most satisfactory, and an hour later, in serving me a delicious dish of fried fish, Domingo said, proudly.

"'Didn't I tell you they were good to eat?'

"'Excellent,' I answered."—*Harper's Young People*.

THE DAIRY.

Skimmings.

Milk is 87 per cent. water.

Cheese is the most concentrated form of milk.

Silage of corn and clover is believed to be the fodder of the future.

Dairy salt is as sensitive as milk or cream to odors, and should be equally guarded from them.

Feed alone will never control the value of milk. The individuality of the cow has much to do with it.

The man who expects the biggest success in dairying must have dairy cows. The all-around cow is not and never will be a shining success.

Feed that will make a pound of beef will make a pound of butter or two pounds of cheese. If butter and cheese bring more than beef there is money in dairying, rather than stock-raising.

Warming water for cows is an American fad that seems to have just reached Europe. Experience here taught that ice-cold water is an expensive drink for stock, but the temperature of ordinary well water is quite warm enough.

Any cow that will give less than 12 pounds of solids in every 100 of her milk, three pounds of which should be butter fat, is not profitable, and should be converted into beef. There should be 13 pounds of solids in every 100 of milk, with four pounds of actual butter fat.

RAISING CALVES.

Replacing the Fat in Separated Milk.

It is the opinion of well-informed cattle men that the steers of the Western States have deteriorated in quality within recent years. This opinion seems to be well founded. Various causes are assigned. Prominent among them is the changed method of raising calves.

Ten years ago the common method in the grazing and leading agricultural States was a calf to a cow, and such a thing as milk with all of its fat taken out was unknown in the list of calf feeds. With the advant of the creamery separator calf raising suffered. Many declared, and still maintain, that good calves cannot be raised upon separator milk. The best experience, however, teaches that the difficulty is mainly in the methods employed rather than in a failure of the milk to supply the calf's needs.

Fresh separator milk lacks but one element necessary to a perfect growing ration for young animals; viz., the fat that the separator removes. The problem then lies in getting the milk to the calves under uniform and as nearly natural conditions as possible, with some good substitute for the fat added. High-priced land and changed conditions have forced this problem upon us. Believing this to be a practical and important line of investigation, the Iowa station has given considerable attention to the subject. About a year ago six high-grade Shorthorn steer calves were taken when about 10 days old, divided into three lots of two each and put into an experiment. Lot 1 had 3,008 pounds of separator milk (from 15 to 18 pounds per day), 250 pounds of hay and 58 pounds of oil meal, and gained 275 pounds at a cost of 2.1 cents a pound for feed, rating skim milk at 15 cents per hundred and grain at prevailing prices. Lot 2 had 3,008 pounds of separator milk, 249 of hay and 58 pounds of oatmeal, and gained 301 pounds at a cost of 1.9 cents a pound. Lot 3 had 3,008 pounds of separator milk, 253 of hay and 56 of cornmeal and flaxseed, mixed at the rate of nine to one by weight, and gained 281 pounds at a cost of 1.9 cents a pound.

These calves were fed on milk supplemented by grain and hay, as detailed above, for 100 days, after which the milk was gradually taken off and the allowance of grain and hay increased. When a year old they averaged 760 pounds, having gained 660 pounds in 365 days. This record shows not only good gains, but very economical growth. The feed record shows that the calves have made gain in weight for much less then is required to make it on steers a year older.

The Wheatfields of Normandy.

We pass through hamlets where the cottages are protected by high banks of earth, hiding all but their thatched roofs. Beech trees, robbed of their lower branches, bear their crests proudly aloft, and hold fast between their naked stems great heaps of rape. The empty pods are sere, and rustle mysteriously in the breeze.

On the broad Normandy acres, where the wheat has just been harvested, a crowd of women, boys and girls is assembled. They dispose themselves at regular intervals, and at the signal, "Allez! glanez!" fall to work with a will, pouncing upon every spear of grain like a hawk upon its prey. The sparrows must look elsewhere for food, for scarcely a kernel is left npon the ground when the gleaners have done their work. But the thank offerings placed by the peasants upon the many Calvaries along the roadsides make partial amends to the birds, who do not hesitate to profit by them. The offering of these bunches of grain is the last act of the service which takes place early in the season. Then the Cure, preceded by a long procession of children, little girls decked with flowers, boys and priests, bears before him, beneath the tarnished dais upheld by white-robed acolytes, the Sacred Host, invoking Divine blessing upon the lands of his little flock.—*Catholic World*.

FEED AND FERTILIZER.

Value of One Day's Cow Rations.

The ration, costing about 22 cents per day, fed a certain cow at the State fair of 1894, consisted of the following amounts:

	Nitrogen.	Phos. Acid.	Potash.
32 lbs. sweet potato vines	.1239	....	....
20 lbs. corn fodder (field cured)	.1539	.0427	.057
4 lbs. cottonseed meal	.2328	.1100	.070
8 lbs. wheat bran	.1862	.2068	.068
Total	.7188	.3595	.195
Used by the cow (estimated at 20 per cent.)	.1438	.0719	.039
Excreted for plant food	.575	.2876	.156

Taking the trade values of these adopted by this Station for 1894, five cents per pound for potash and phosphoric acid, and nitrogen 18.2 cents, gives the following value for the plant food residue of the above ration:

.575 pounds nitrogen at 18.2	10.465 cents
.288 pounds phos. acid at five cents	1.440 cents
.156 pounds potash at five cents	.780 cents
Total valuation	12.685 cents

Here is a saving of 12½ cents per day from the original ration, costing 22 cents, to be used in increasing the farm crops, provided none of it is lost.

Losses of nitrogen occur very easily. Just at the point where the excrement is voided, 25 to 60 per cent. of it is returned to the atmosphere unless especial care is taken to fix it by use of dry, fresh soil or large amounts of gypsum. No homeopathic doses can prevent the losses. Dry soil is best when freely used, because cheapest and more likely to be used in quantity to accomplish the object.

Suppose the loss to be 50 per cent. of nitrogen, five cents per milch cow per day. This saved or even half saved will pay high wages to the man in charge of a herd who saves it by keeping a quantity of fresh soil or gypsum on hand for it. Gypsum has an effect of its own on soil and crops by adding lime where deficient, which can be a help toward returning its cost where used.

This Station has long used acid phosphate and kainit in equal parts by weight behind the cows to help save the nitrogen. Half a pound to three-fourths of a pound per day and cow, is sprinkled down after the stable is cleaned, so as to begin action on any liquid that comes in contact with it.—F. E. EMERY, Agriculturist, North Carolina Experiment Station.

The Instability of Sheep Raising.

While sheep raising has always had an important place, and has often been the most profitable livestock industry in the United States, there has been an instability peculiar to the business that did not belong to any other valuable industry.

Just why it should be the custom to go into the business of sheep raising with the expectation of quitting upon the very first intimation that sheep were depreciating in value, has been, is now, and must remain, a curiosity and an astonishment. In looking for the cause of this vascillating state of the sheep industry there is a growing conviction with us that the business has been one-sided and incomplete. Only one product, that of wool, has been the aim and purpose for which sheep have been kept. It is true, until quite recently, the mutton product has not been a very important factor of profit. This is happily very materially altered, and comes to the farmer now as the prime factor of profit from the flock. Nor is this all by any means; sheep can be, and ought to be, an invaluable factor of fertility to the farmer's soil.

The British farmer could not carry on his farm without sheep. His soil would become so poor in a few years that paying crops would cease to be grown and he would become bankrupt. No landlord in the British Islands would allow a tenant the use of his land that did not keep and judiciously manage a flock of sheep. With them no sheep means no crops and no money.

The wonderful drain upon the farmer's pocket for artificial fertilizers, as is going on in Maryland, Virginia and all the South, is unknown in England and on the continent of Europe. It is only a question of time when sheep farming must become better understood and universally adopted by American farmers. There is not an acre of land in this country that can be farmed without a loss of fertility, an appreciable loss, and in only a few years, at that. The old pine fields of Virginia and the abandoned farms of New England are monuments of folly in trying to raise crops without sheep husbandry as a factor of fertility. When such a system of farming is used, when sheep are regarded as absolutely necessary to profitable, good farming, then the waxing and waning of sheep husbandry will be unknown in this country and sheep raising will be the rule east and west, north and south. With such a well regulated, evenly balanced sheep husbandry the United States will produce more wool and more mutton, and of a better class, than any country of the world, but not until then.

Clean the Wool before Shipping.

The Western wool growers have been paying the railroads lots of money for carrying their soil to the Eastern markets. They are not able to sell their dirt in Chicago, New York and Boston for as much money as they want, and are kicking about it. The wool manufacturers want clean wool. When they buy clips they estimate the amount of clean wool and deduct the cost of sorting and scouring, so that the wool grower pays freight on dirt, pays for scouring, etc. Why not do the sorting or grading and the scouring before sending the wool to market? The railroads prefer to be paid for hauling dirt; the commission men are willing to be paid for selling dirt; the manufacturer would as soon buy wool in the dirt, because he estimates the shrinkage above the fact, so he is not only safe, but a little ahead. The wool grower is the only one who is wronged.

THE ORCHARD.

Cullings.

At present figs are worth $1.50 a bushel, and if properly put up, they will probably yield $1 per bushel for years to come. An acre of 100 fig trees 10 years after planting may produce $2,000 worth of figs. The trees are propagated from cuttings and have no insect enemies.

Fruit intended for Winter keeping should be allowed to sweat before being finally stored away. This is done by allowing it to remain in piles for a short time, varying according to the kind of fruit, and extending, in the case of apples, to a fortnight or more. Surplus moisture exudes through the skin.

The market for American apples will be good throughout the Winter. It is important that the shippers understand that only choice fruit will pay profit on shipments. It is equally important that the apples be carefully handled and properly packed. There is also a good demand in England for high-class cidar, and there is no reason why the American farmer should not export in this form the apples not properly conditioned for shipment.

Some of the best grapes require the skill and care of an expert and these the average farmer would neglect. The Concord will bear without much care and will respond to good care. The same is true of Iona and Clinton, and cuttings of these if obtainable should be put down. The two latter if allowed to grow on a shade tree or if they are trained along a building will give a long grape season. They will thus be out of the way of poultry and last till snow and freezing destroys them.

Experiments show that the extreme variations in climate, from the excessive hot of Summer to the very cold of Winter, is injurious to the vitality of apple orchards. Many old orchards are so far gone that they do not ripen fruit. This has been specially noticeable in the North and Northwestern States, where the denudation of the forests has to a certain extent changed the climate. This climatic change affects some varieties more than others, and a noticeable feature is that old varieties that thrived years ago are poor stock for to-day, and that new varieties must be grown for this region.

GIRDLED TREES.

A Plaster that is Good for Wounds—An Old-fashioned Remedy.

A writer in an exchange says: The rabbits, mice and other rodents usually injure trees in the Winter so that by Spring it is necessary to repair them in some way before Summer. Unless the pests have eaten the inner bark all arounds the trees, they will recover with proper treatment. The best remedy to apply is to make a stiff plaster out of clay and cow manure, adding a little water to make it more plastic. If such a plaster is placed over the barked portion of the tree, and secured into position by a covering of old bagging or cloth, the wound is likely to heal up in a short time. If the weather is very dry it will be necessary to wet the bandage occasionally.

The great object of the application is to keep the wound moist while nature heals up the injury. If the wound is a large and serious one it may be necessary to cut off many of the top limbs of the tree. This is to equalize the flow of the sap, which is necessarily diminished by the wound. Other remedies for girdled trees are recommended, but for a simple and effective device, which any orchardist can apply, this one cannot be surpassed.

Setting Out a Peach Orchard.

Use trees only one year from the bud, and don't buy them from a tree agent, but get them from a nurseryman who will not cheat you. In planting don't set them any deeper than they grew in the nursery. Trim the bruised ends of broken roots smooth with a sharp knife. Then trim off clean all the branches made in the nursery and cut the stem square off at the hight you want to form the head, leaving the tree about the size of an ordinary walking-stick. When growth begins in Spring the buds will start all along this stem. Rub off all except three or four at the top, which will make the future head. The next Winter these shoots should be shortened one-half and the same practice followed annually. Plant 16 x 16 feet and cultivate in a hoed crop. In Fall sow crimson clover and plow it under in Spring for manure. —W. F. MASSEY, North Carolina Experiment Station.

Two Famous Old Apple Trees.

The decayed stump is all that remains of the famous "mother tree," the oldest known specimen of the Rhode Island Greening. A few rods southwest of the old limekiln on the northern verge of Fruit Hill, on Frederick W. Winsor's farm, stands a younger tree. Mrs. Winsor's great great grandfather, Nehemiah Smith, planted the mother tree, of which the other is a limb wrenched while loaded with fruit from the parent stock, during King George II.'s reign, in 1748, and it was therefore 141 years old when it was cut down in 1889-90, and its life from the seed must be nearly 150 years.

The present tree, "the daughter tree," so-called, is a limb of the mother trunk, and was broken off in the September gale of 1815, and which from an elbow thrust into the moist, rich soil, took root and became independent. F. M. Perry, of Canandaigua, New York, a famous nurseryman and pomologist, pronounced the fruit of these trees the finest of the Greening family, and procured hundreds of scions from the stock to introduce into New York and the Middle States.

The present year the younger tree bore about 10 bushels of the finest quality of apples, and bids fair to breast the storms of many a Winter yet to come—*Providence Journal*.

Lice on Trees, etc.

EDITOR AMERICAN FARMER: What is the cause of lice on trees, fruits, grapes, cabbages, etc.? What is the remedy for them? What is the cause of fruit leaves curling up, and what is the remedy?—E. D. LLOYD, Johnstown, Pa.

Plant-lice, called by the entomologists "aphides," are hatched out from eggs which their parents deposit in the Fall and early Winter in crevices in the bark and other safe places, and which hatch out in the Spring. They then reproduce others in almost countless numbers. The figures employed by scientists to express the reproduction from a single insect are far beyond the comprehension. Huxley estimates that the 10th brood alone would weigh more than 500,000,000 stout men. Fortunately they have numerous and powerful enemies. Storms, rain, cold, etc., destroy enormous numbers of them. Lady-bird beetles, lace-wing flies, syrphus flies, and other insects make it their business to devour them.

They can best be destroyed by kerosene emulsion, strong soapsuds, tobacco decoction, whale-oil soap, or other spraying mixtures used liberally. White hellebore, and pyrethrum, dry or in solution, are also effective.

Curling up of leaves is caused by various things, most frequently, however, by "scab," a fungus, which lives through the Winter on twigs, bark, etc., and sends out a lot of spores in the Spring to attack the leaves and fruit.

The remedy for this is repeated spraying with the Bordeaux mixture, or ammoniacal carbonate of copper, beginning before the leaves come out, repeating just after they appear, and going over afterward as circumstances shall indicate. —EDITOR AMERICAN FARMER.

Raising Coyotes Now.

Sheep ranchers in many parts of Oregon and other Northwestern regions are getting discouraged over the decreasing value of sheep and the increasing value of land, and at a recent meeting of ranchers in Oregon it was suggested that they should drop sheep and go in for raising coyotes. Coyote scalps are worth $6 each, while sheep are worth anywhere from $2.50 down. Then, a ewe will raise only one or two lambs in a season, but a coyote will easily raise a family of five or seven. The arithmetic and logic of the matter are easy.